

Triennial Report

on

Vaccination in Burma

for the Years

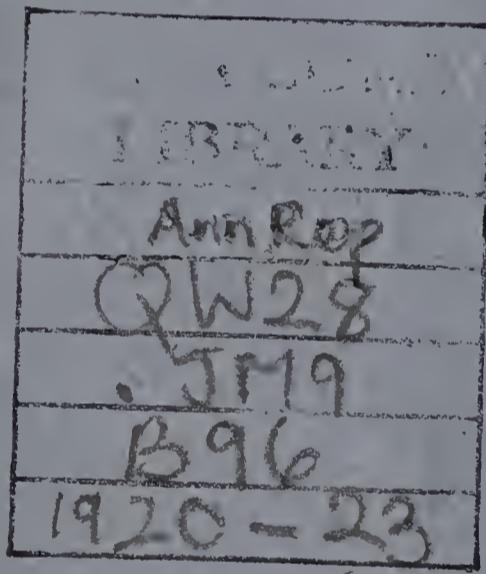
1920-21 to 1922-23

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Rangoon: Superintendent, Government Printing, Burma

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RESOLUTION
ON THE
TRIENNIAL REPORT ON VACCINATION IN BURMA
For the Years 1920-21 to 1922-23.

Extract from the Proceedings of the Government of Burma, Department of Public Health, No. 251 S.-23, dated the 24th July 1923.

READ—

The Triennial Report on Vaccination in Burma for the years 1920-21 to 1922-23.

Resolved that the Report be published.

By order of the Government of Burma (Ministry of Education, Local Government and Public Health),

E. H. JONES,
Secy. to the Govt. of Burma, Depts. of Local Government and Public Health.

TRIENNIAL REPORT
ON
VACCINATION IN BURMA
FOR THE YEARS 1920-21 to 1922-23.

General Review.—It is satisfactory to be able to record an appreciable advance in vaccination work in the triennium under review. The virulence of the small-pox outbreak of 1919-20, the worst year since 1912-13, abated in June 1920, but the check was only temporary, for the disease lingered in endemic or mild epidemic form in many districts and again broke out violently in Magwe early in 1923, and spread from there to the neighbouring districts of Minbu, Myingyan and Pakôkku. Rangoon has maintained a steady record of a rather high incidence since February 1923.

Previous reports have referred to three factors as stimulating vaccination work in Burma.—

- (1) Outbreaks of epidemic small-pox.
- (2) Improved organization and supervision of the District Vaccination Staffs.
- (3) Increased interest shown in vaccination work by Deputy Commissioners, and their Subdivisional Officers, and by Presidents and Members of the Municipal Committees.

To these I would add a fourth factor which is gradually making itself felt, namely, "increased appreciation by the people of the benefits conferred by vaccination and increased belief in its real efficacy."

It can no longer be said that people in Burma as a whole are actively antagonistic to vaccination. Opposition due to ignorance and prejudice is much less common than formerly, while that due to misdirected political activity, is being stoutly discountenanced by the saner heads among political societies. The absence of epidemic small-pox in a community is inimical to efficient vaccination under the voluntary system, but it does not take long for people to bestir themselves and apply for protection at the threat of an epidemic. The lead taken by the newly created District Councils of Tharrawaddy and Thayetmyo in applying to Government for extension of the Vaccination Acts to their districts is an evidence of this communal desire for protection and is worthy of imitation by others. Several Civil Surgeons have remarked in their Annual Reports that the people of their districts are prepared to accept compulsory vaccination.

The marked general improvement in vaccination work appears to me to be due principally to greater appreciation of the measure by the people, although the menace of small-pox and the interest taken by district and village officials of all grades in educating and persuading

the people to accept vaccination must have contributed to the result. There was no improved organization of district staffs and if anything, the supervision exercised over the work of the vaccination staff was less perfect in many districts than in the past; yet each year of the triennium under review produced results more favourable than any of the previous years excepting 1919-20. The number of operations (excluding dispensary vaccination) performed in 1920-21 and the two succeeding years was 670,425, 650,140 and 697,829, respectively, against 469,471, 469,574, 549,149, 492,008, 563,020, respectively, in 1914-15 and the four succeeding years, while in 1919-20 the figure was 839,079. The total operations and the successful vaccinations for the triennium were the highest on record as can be seen from the following table:—

	1908-11.	1911-14.	1914-17.	1917-20.	1920-23.
Operations {	Total .. 1,172,663	1,553,923	1,488,194	1,894,107	2,018,294
Primary .. 1,091,69	1,256,460	1,217,105	1,337,822	1,494,068	
Successful Vaccinations .. 1,06,589	1,940,948	1,237,71	1,530,659*	1,686,531	
Successful Primary .. 987,695	1,164,704	1,118,580	1,242,008*	1,294,637	

* Revised figures.

2. *Operations.*—The increase is wholly derived from primary cases, there having been a considerable fall in the aggregate of revaccinations. Arakan, Pegu, Irrawaddy, Tenasserim and the Frontier divisions recorded an increase, while Rangoon, Mandalay and Border divisions registered a decline, Arakan and Mandalay returning the largest increase and decrease respectively. Districts showing a decrease are Rangoon, Thayetmyo, Mergui, Pakokku, Sagaing, Upper Chindwin, Mandalay, Yamethin, Putao and Myitkyina. The decrease in Rangoon, Pakokku, Sagaing, Mandalay and Myitkyina is wholly in revaccination while that in Thayetmyo was all in primary vaccination. In other districts the fall is noticeable in both primary and revaccination.

Including the 4,630 vaccinations performed in dispensaries the total operations for the province in 1922-23 amounted to 702,459. Of these 4,599 (primary 1,007 and revaccination 3,592) were returned by "other agencies" leaving 693,230 operations as the output of 336 vaccinators (2,063 per head) employed during the year.

3. *Successful Vaccinations.*—The only divisions which in the triennium returned fewer successful vaccinations were Rangoon and Mandalay but these showed an increase in primary vaccinations, the deficit being entirely in revaccinations. Other areas in which a fall in successful revaccination was observed were the Border and Frontier divisions. Districts in which decrease in successful primary operations was reported were:—

Hill District of Arakan (210), Tharrawaddy (8,438), Amherst (1,982), Thayetmyo (4,063), Mergui (5,817), Lower Chindwin (1,277), Upper Chindwin (889), Yamethin (2,430) and Putao (1,247).

As in the previous triennium Henzada district easily heads the list for successful primary vaccinations, there being a difference of nearly 20,000 cases between it and Thaton which comes next in order.

A large increase in successful primary vaccinations was reported from the districts of Kyaukpyu (16,455), Myaungmya (12,772), Pyapôn (21,509), Thaton (10,931) and Northern Shan States (15,489) while increase in revaccinations is returned by Akyab (25,930),

Amherst (15,456) and Lower Chindwin districts (19,700). Of the total of 566,063 successful vaccinations reported in 1922-23, 488,208 were primary and 77,855 were revaccinations; of these again 149,939 were performed in children under one year of age and 251,662 in those between one and six years. The success rate of primary vaccinations was 98.10 per cent. and of revaccinations 53.80 against 98.08 and 58.44 respectively in 1921-22 and 97.48 and 55.67 in 1920-21.

On the whole, the protection afforded to the people of this province stands well in comparison with that obtaining in the other Indian Provinces, Burma heading the list with 40.82 per mille in 1921-22 while Assam, Punjab and Bengal came next in order with 37.06, 34.80 and 32.40 respectively. In 1922-23 the ratio was still higher, 43.19. In 1921, the latest year for which information is available, the rate of mortality from small-pox was also the lowest except for the United Provinces. It is worth noting that in Lower Burma the relatively higher rate of protection enjoyed by the community in the period 1917-22 appears to have resulted in a pronounced fall in the rate of mortality from small-pox. This is shown in the following table:—

Quinquennium.	Ratio per 10,000 successfully vaccinated.	Ratio per 10,000 of mortality from small-pox.
1907-12	315.70	3.81
1912-17	369.04	2.85
1917-22	444.68	1.66

4. *Comparative Study of Vaccination work performed.*—In order to compare the extent of the progress of vaccination in areas where no compulsion is adopted with that of those areas where the Vaccination Acts of 1880 and 1909 have been enforced, I have, following the precedents of Bombay and Bengal, had statement I of the report prepared this year in a more elaborate form, so as to furnish separate statistics for rural and urban areas of each district with the totals. These figures are analysed below, division by division.

Araukan.—The increase in operations over the previous triennium was 81,093 of which more than half (54,914) were revaccinations. Akyab district registered an enormous rise in revaccination (over 600 per cent.) there having been 46,598 operations in the current triennium (chiefly in the last two years) as against 6,629 in the previous three years while the increase in primary vaccination was only 10 per cent. Successful primary vaccinations in Akyab district numbered 52,308 against 46,345 in the preceding three years, and revaccinations 27,414 against 1,484. Of these Akyab town accounted for 3,731 primary and 12,594 revaccinations. Small-pox broke out severely both in town and district in 1921-22, the outbreak being traced to a case imported from Bombay; and in 1922-23 a continuation of the same epidemic caused 544 attacks and 103 deaths in Akyab town, and 464 deaths in 77 villages of the district, Buthidaung township mainly

populated by Chittagonians being particularly severely affected. A number of extra Vaccinators were employed between February and May 1922, and a vigorous vaccination campaign was started resulting in the revaccination of a very large number of persons. One of the Vaccinators was convicted at Minbya for illegal collection of money from people of Chaunggyi, was fined Rs. 100 and dismissed from Government service. Another was dismissed for falsification of his diary. It appears that for several years little or no vaccination was done in many of the affected villages, and in consequence the people were highly susceptible to an outbreak. The Civil Surgeon remarks that these Chittagonian settlers hide their children whenever a Vaccinator visits them, and the enforcement of a thorough house to house inspection to determine the exact number of unprotected persons is difficult, owing to caste prejudice and the purdah system. An additional Vaccinator was however sent to this area to meet all contingencies. It is hoped that the lesson learnt by these Chittagonians will not be quickly forgotten and it would be well were the Akyab District Council to follow the lead of Thayetmyo and Tharrawaddy and apply for an extension of the Vaccination Acts, in order to obtain the necessary powers to enforce vaccination among the recalcitrant foreign element in their population.

Kyaukpyu district showed an increase of 29,988 operations, of which only 17,581 were primary. Most of the operations were performed in rural areas. The presence of small-pox was a factor contributing to the increase. This district has been without a Supervisor of Vaccination from the 28th February 1922 to the 31st March 1923.

The work in Sandoway district referred to last year as being very unsatisfactory is showing signs of improvement. There were in 1922-23, 9,662 operations (7,452 primary) of which 6,685 were successful, this being the highest figure for several years. This result is said, by the Deputy Commissioner to be due to the strong stimulus given by the Civil Surgeon Dr. Gupta. Small-pox was also prevalent in several villages—notably in Taungup, Nabinchaung, Kyaungchaung and Peintakaing. Cases were not promptly reported and segregation was not immediately enforced; so the infection spread rapidly. It is reported that the district is full of quacks. These men inoculate by their own methods using active small-pox virus and causing an attack of true infectious small-pox and some have a large following. A man is recently reported to have acquired great popularity with pills. Although several of those who took his pills died shortly afterwards from small-pox, he continued to have a following. It is satisfactory to record that action has been taken against him under section 133, Criminal Procedure Code. No more convincing argument is needed to enforce the Prohibition of Inoculation and Extension of Vaccination Act to all rural areas, than the continued presence of these inoculators who by their dangerous methods spread small-pox from village to village, conferring immunity no doubt upon the few but endangering the health of the many, and originating numerous small foci of the disease from any one of which a serious epidemic may rise.

Rangoon Division.—Insein and Hanthawaddy districts maintain their steady output. The Act for the Prohibition of Inoculation and

Extension of Vaccination, extended to these districts in 1916 has worked well, and in view of their position surrounding Rangoon, which, as pointed out by Colonel Williams in the triennial report for 1914-15 to 1916-17, is the main portal of small-pox in this province, it is worthy of consideration whether the Vaccination Acts of 1880 and 1909 should not be extended to those two districts forthwith.

Including steamer vaccinations (18,43) the number of operations performed in Rangoon in 1922-23 was 46,606—primary 27,631 and revaccinations 18,975—as against 34,748 in 1920-21 and 42,765 in 1921-22. The number of successful cases was 15,277, an increase of 4,192 and 2,659 respectively, as compared with the figures for 1920-21 and 1921-22. The Health Officer reports that house to house inspection throughout Rangoon is being carried out in all congested quarters and cooly barracks to find out hidden cases of small-pox and that an educational campaign is being carried on both by Newspapers and Cinema advertisements. He points out with great truth that in the absence of legal powers to compulsorily revaccinate, no perfect protection against small pox is possible. This has been the universal experience throughout the world. Primary vaccination and revaccination are our safeguards against small-pox and for the complete cessation of the disease the latter is as necessary as the former. In the stress of a great epidemic, fear is the stimulus which drives people to be revaccinated, but when all susceptible people have been attacked and the disease has disappeared to wait its next opportunity, this fear is too quickly forgotten and nothing less than compulsion will overcome the indolence and apathy that develops in its place.

Pegu Division.—This division recorded in 1922-23 an increase in vaccination operations as compared with any of the previous five years. Tharrawaddy and Toungoo showed increase while Pegu, Prome and Thayetmyo have lately registered a fall. The increase in the former districts was mainly in revaccination which in Tharrawaddy rose to 10,976 as against 4,415 in 1921-22, while the primary operations fell from 20,325 in 1921-22 to 18,349 in 1922-23. In Toungoo also there was a decline in primary cases. None of the towns in Tharrawaddy district employ their own Vaccinators. All depend on District Vaccinators and Dispensary Sub-Assistant Surgeons. The figures furnished appear to indicate that infants are well protected in these towns but as pointed out in the Public Health Administration report, birth registration is very defective, a fact which accounts for the numerous deaths among children under 10 years in the recent small-pox outbreak.

The Civil Surgeon reports that in Minhlā, Zīgōn and Nattalin no rules have yet been framed for the working of the Vaccination Act which was introduced in 1915, and that nothing has as yet been done to extend the Act to the towns of Tharrawaddy and Sitkwin.

Irrawaddy Division.—This division recorded the largest increase in primary operations for the triennium, Myaungmya and Pyapōn contributing the highest figures. Bassein district has returned the lowest number of primary operations for many years, and the Civil Surgeon remarks that the decrease chiefly in Thabaung, Ngaputaw and Kyaunggōn townships was due to the absence of small-pox. The district as a whole has kept up its reputation for the best revaccination work in the division.

The large increase in Myaungmya is attributed to a small-pox scare. Karens are said to welcome vaccination in all districts, while Burmans submit to it as a necessary evil. In Ma-ubin district primary vaccinations were four times as numerous as revaccinations, and it is suggested that an intensive campaign of revaccination should be undertaken. The district has been comparatively free from small-pox for some time and this should be treated as a danger sign. A small outbreak of small-pox occurred from inoculation by Burmese *Sayas* and the Township Officer is stated to be making enquiry. In Kyaiklat and Dedayè townships (Pyapòn district) 27 and 15 children respectively have been inoculated and the *Sayas* are being prosecuted. In Henzada district several parents of children in different villages were prosecuted for inoculating their children, and sentenced to a fine of Rs. 20 each or 21 days' rigorous imprisonment. Other cases are under enquiry. Vaccination in this district has made considerable progress during the Civil Surgeoncy of Dr. Isa Charan and he is to be congratulated on the success achieved.

Tenasserim Division.—Mergui district returned a decrease in the triennium of 5,856 primary and 5,544 revaccination cases; while in Amherst the fall (1,616) in primary cases was more than made up by a large increase (35,198) in revaccinations. The other districts have all recorded a rise in primary as well as revaccinations.

The increased output in Salween is due to two permanent Vaccinators having been employed throughout the year. Formerly only one permanent Vaccinator and a temporary Vaccinator for a few months each year were employed. The Medical Officer calls attention to the fact that while the less sophisticated hill people in his district have no objection to vaccination, the people in closest touch with the rest of Burma are those who object most. By contrast, in the Hill District of Araken the more civilized townpeople are said to appreciate vaccination and the uncivilized hill-tribes to resist it.

The decrease in Amherst district is reported to be due to absence of small-pox and depletion of staff both for vaccination and supervision. One Supervisor died and the other was suspended for malpractice. There were also changes due to suspension and illness of vaccinators.

Tavoy district returned an increase in primary vaccination and a decrease in revaccination. Vaccination is reported to be popular in both district and town. The decrease in Thatôn and Mergui was due to absence of small-pox. The previous years' figures in these districts were unusually good owing to energetic vaccination campaigns and the reaction is a natural one. In Thatôn there was a total absence of check by Supervisors one of whom was subsequently dismissed and the other suspended for four months.

Mandalay Division.—There was a heavy decline in revaccination in this division due to cessation of the extensive vaccination campaign in Yamèthin district in which nearly 250,000 people or more than $\frac{2}{3}$ of the total population of the district were revaccinated in the three years 1918-19 to 1920-21. In 1922-23 only 1,426 revaccinations, about half of number done in the previous year, were performed.

In Mandalay district the rural areas recorded an increase in primary vaccination and a decrease in revaccination while the reverse was the case in urban areas. Here also a campaign undertaken simultaneously

with that at Yamethin came to an end in 1921-22. Out of the 905 prosecutions instituted in Mandalay town under the Vaccination Act in 1922-23 only 12 cases were fined, the total amount realized by fines having been Rs. 12. This is disappointing and it is obvious that such small fines can have no deterrent effect. The Civil Surgeon reports that the attitude of the people in the rural areas is more favourable to vaccination and that they appreciate its benefits.

In Maymyo town the protection of the population against small-pox is stated to be very good. Myingyan, Magwe and Minbu all showed an increase in primary as well as revaccinations, the result of epidemic small-pox. The epidemic was prolonged by the action of inoculators who were very active. In Minzu and Letkokpin villages (Magwe district) 150 and 131 cases respectively were inoculated by Burmese *Sayas* and similar occurrences have been reported by the Civil Surgeons of Myingyan and Minbu, but no action was possible against them as the Act of 1908 has not yet been extended to these districts. The Deputy Commissioner, Myingyan, believes, contrary to the opinion of his predecessor, that Township Officers are evincing considerable interest in vaccination. He says that several headmen in Pagan township approached him with the request that vaccinators might be sent as their villages had not been visited for several years.

The system of concentrated work continued in force in Meiktila and Myingyan districts, but the results have not been satisfactory. Myingyan reverted in January 1923 to the old system of each Vaccinator touring in his own township. There was no small-pox stimulus in Kyaukse district where revaccinations were few but primary vaccinations more than in the preceding year. Vaccination here is reported to be popular and the Vaccinators well known and liked by the people. The progress of vaccination in Meiktila district has been retarded by the activity of Wuathanu Associations with the result that there has been a slight fall in primary vaccination and a heavy decline (from 2,377 to 516) in revaccination. The prevalence of plague and the absence of small-pox were also contributory causes to the decline. Both the Civil Surgeon and the Deputy Commissioner strongly urge the introduction of compulsory vaccination in this district.

North-East Frontier Division.—There was in the triennium an increase of 20,689 primary operations and a decrease of 1,424 revaccinations. The increase was noticeable in all districts and the decrease in Myitkyina. As compared with the preceding year the Southern Shan States recorded in 1922-23 an increase both in primary and revaccinations, while in Bhamo the increase was in primary operations, revaccination having fallen by 470. Other districts returned a decrease in both kinds of operations. In Putao only Military Police and Government servants in Civil employ were vaccinated, the measure still being of too recent introduction to overcome the natural prejudice of these primitive people. The Deputy Commissioner remarks that if the three Vaccinators for whom provision has been budgetted be sanctioned it will be possible to get most of the Shans protected. In Myitkyina, Indians, Burmans and even Hill Kachins are said to appreciate the measure and the only difficulty is to get lymph in good condition to the more remote villages. Two large Hill Tracts in this district were completely protected in 1922 by locally trained Vaccinators.

In Bhamo the work was not systematized and the Vaccinators were left much to their own devices, without any programme. The Civil Surgeon is remedying this defect.

North-West Border Division.—The general decrease in the triennium was mainly in revaccination, Pakôkku and Sagaing together accounting for a deficit of 37,324 operations. There were fewer primary operations in the Ruby Mines subdivision and Upper Chindwin districts, but the slight fall in Lower Chindwin in primary vaccination has been obscured by the record number of revaccinations performed there in the triennium. In Shwebo, Sagaing and Lower Chindwin districts, the activities of the village Wunthanu Athins are said to be at the bottom of the difficulty experienced in getting together as large a number of children for vaccination as in the past. A Vaccinator of Mônywa joined this Association while on leave and went about collecting subscriptions and obstructing vaccination. He was dismissed. In spite of antagonistic influences the common sense and spirit of co-operation of the people in anti-epidemic measures have prevailed. Vaccination is nowhere seriously objected to in these three districts and its beneficial effects are thoroughly understood, though trivial excuses for postponement are now and again produced, more as a matter of principle than from any real desire to forego its benefits. In the Chin Hills, owing to the interest taken by Mr. L. B. Naylor, Subdivisional Officer, vaccination has become popular in Tiddim subdivision; elsewhere people in the neighbourhood of towns appreciate it while those in remote villages decline. The Shans and Kadus in Katha district are stated to accept vaccination readily.

5. Dispensary Vaccination.—The number of persons vaccinated at dispensaries was less in this triennium by 3,716 than in the previous one, but if we exclude the figure for 1919-20, when abnormal conditions prevailed owing to an extensive spread of small pox, the number returned for each of the years in the triennium is much in excess of any previous year. More than half the number were performed by the Sub-Assistant Surgeons on escort duty in Myitkyina district. They vaccinated 2,311 persons in 1920-21, 4,921 in 1921-22 and 755 in 1922-23. Other districts from which a large number of dispensary vaccinations were returned in 1922-23 are:—Tharrawaddy, Ma-ubin, Bassein, Pakôkku, Upper Chindwin, Bhamo and Northern Shan States. Cases primarily vaccinated in the triennium numbered 8,500 with a success rate of 98.75 against a previous 10,810 with a success of 89.12; and those revaccinated 6,183 (successful 59.00) against 7,589 (successful 61.74).

6. Revaccinations.—The number of operations performed on this account in the triennium was 524,326 a decrease of 31,959. Of this number 241,894 or 46 per cent. were successful. This figure was greatly in excess of that returned for the three previous triennial periods except the last. In 1922-23 revaccinations comprised a quarter of the total operations, and of this about 70 per cent. were returned from rural areas and 30 per cent. from urban areas. Akyab district alone accounted for more than the total of Irrawaddy, Tenasserim, Border or Frontier Division and for nearly as many as Rangoon or Pegu division. Other districts in which many revaccinations were

performed were Rangoon, Tharrawaddy, Amherst and Magwe, and the percentage of success 52.41, 70.04, 42.21 and 50.51 respectively against 71.68 for Akyab.

7. *Vaccination in Jails.*—In 36 jails 31,098 persons were vaccinated in 1922-23 of whom 28,919 were revaccinations. The ratio of success was 63 per cent. for primary and 45 per cent. for revaccinations. No primary operations were done in Insein, Myanauug, Mandalay, Myingyan, Magwe, Pegu and Thatôn jails and no revaccination was performed at Mawlaik.

8. *Vaccination in Towns.*—Of the 149,542 children under one year successfully vaccinated in 1922-23, 123,450 were in rural areas and 26,092 in urban areas. The total number of persons receiving primary vaccination was 42,341 and those revaccinated 51,307, the percentage of success being 98.95 and 57.26 respectively. Cent per cent. primary success was reported from Akyab, Insein, Nyaunglebin, Shwegen, Pyu, Thayetmyo, Myanaung, Kyangin, Kyaikto, Thatôn, Mandalay, Maymyo, Kyaukse, Meiktila, Yamethin, and in all the towns of the Tharrawaddy district, while low percentages were reported from Wakema, Pakôkku, Myingyan, Yandoon, Kyaiklat and Magwe. Success in revaccinations varied from 12.99 in Pakôkku and 14.75 in Insein to 97.30 in Kyaukse.

9. *Infant Vaccination.*—In the 61 towns in which vaccination is compulsory there were registered in 1922-23, 30,875 births and 8,858 deaths under one year thus leaving 22,017 children available for vaccination, but the number of operations reported to have been performed on children under one year in these towns during the period was 25,777. This apparent excess is due to defective birth registration, to deaths of vaccinated infants and also to immigration from rural districts.

10. *Vaccination Establishment.*—The following table shows the strength of the Vaccination establishment employed during the last six years:—

Years.	District Superintendents.	Sub-Assistant Surgeons.	Supervisors of Vaccination.	Head-Vaccinators.	Vaccinators.
1917-18	...	42	36	3	308
1918-19	...	42	28	3	321
1919-20	...	42	29	3	325
1920-21	...	41	29	3	347
1921-22	...	41	35	3	337
1922-23	...	41	31	1	336

During the year 1922-23 the cadre of Sub-Assistant Surgeons who were receiving vaccination allowance or who were otherwise employed in the Vaccination Department decreased by 4.

Sanction to the increase of the permanent Vaccination establishment by one Supervisor of Vaccination, and two Vaccinators in Myingyan district and one Vaccinator in Magwe district was received but effect was given during the year 1922-23 only in Magwe. The

Supervisor Staff suffered loss by the death of one (Amherst district), resignation of one (Sandoway District), removal of one (Myaungmya district) and dismissal of two (Minbu and Thatôn districts). Eight **Vaccinators**, *viz.*, two each from Akyab, Ma-ubin and Myaungmya districts and one each from Upper Chindwin and Lower Chindwin districts were either removed or dismissed from the service.

Two out of the three Head Vaccinators employed in the Southern Shan States, have since resigned their appointments and their places are still vacant for want of suitable candidates.

11. Vaccination by "other agencies."—These amount to 1,007 primary and 3,592 revaccinations and include 506 primary cases performed by the licensed Vaccinator, Kyauktaga Grant, Pegu district; 282 primary and 3,452 revaccination cases done by Medical Registrars in Rangoon; 17 primary cases by Medical Practitioners in Moulmein; and 202 primary and 140 revaccination cases by the Civil Surgeon and his Medical Staff in Putao.

12. Verification of Results.—Civil Surgeons verified 8 per cent. and Supervisors of Vaccination 53 per cent. of the number of persons vaccinated in 1922-23. A minimum of 10 per cent. has been regarded as an adequate proportion for a Civil Surgeon's verification work in consideration of his other multifarious duties. This year's work falls short of this minimum and is also much less than the work done in the two preceding years. It is necessary that Civil Surgeons devote more attention to this verification work which is the sole check we have on the work of the Supervisors. The proportion of cases verified by Supervisors is also less than in the previous year but more than in 1920-21. The Civil Surgeon, Pyapôn, performed no verification at all. The Civil Surgeon Toungoo, verified only six primary cases out of a total of about 20,000 cases performed in his district and the Civil Surgeons, Akyab and Shwebo, 41 and 86 cases in about 45,000 and 17,000 respectively. Other districts in which low verification (less than 5 per cent.) was done by Civil Surgeons are Thayetmyo, Bassein, Henzada, Myaungmya, Salween, Thatôn, Shwebo, Upper Chindwin, Chin Hills, Magwe and Minbu. Explanations are being asked for from these officers. The highest verification was done in Meiktila where 46.70 per cent. of the 8,494 primary cases were verified by Dr. Aung Tun with 100 per cent. success. Other districts in which the Civil Surgeons verified a large proportion (over 20) of cases are:—Yamethin, Lower Chindwin, Pegu, Tavoy and Putao.

A large percentage of verifications of primary cases was done by Supervisors in Rangoon (88 per cent.), Pyapôn (84), Pegu (83), Meiktila (81), Lower Chindwin (81), Insein (80), Tavoy (80), Ma-ubin (79) and Thayetmyo (76). Omitting the districts which have no Supervisors or in which the Supervisors worked only for part of the year, short verification work in primary vaccination was noticed in Pakôkku (40 per cent.), Toungoo (45), Henzada (46), Shwebo (47) and Akyab (47); and the revaccination cases verified by these Supervisors in the same districts was 33, 41, 10, 16 and 56 per cent. respectively. Judged by the actual number of verifications reported, good work has been done by the Supervisors of Pyapôn, Ma-ubin, Mandalay, Henzada, Tharrawaddy, Pegu, Sagaing, Southern Shan States, Myingyan, Bassein, Insein and Akyab.

In Kyaukpyu success rates of 95.42 and 47.35 were claimed by Vaccinators for primary and revaccinations respectively whereas of the 1,600 persons examined by Civil Surgeons for primary operations 70 per cent. were found successful and of 938 examined for revaccination 26 per cent. were found successful. In Hanthawaddy the Supervisor reported 68 per cent. primary successes against 99 per cent. claimed by Vaccinators and 97 per cent. calculated by the Civil Surgeon. Other districts in which similar disparities in verification of primary operations prevailed are Prome, Myaungmya and Mergui.

13. *Cost of the Department.*—The total amount spent for the department in 1922-23 was Rs. 3,24,782, of which Rs. 2,08,482 was towards the pay of the establishment, Rs. 23,669 towards contingencies, the balance being travelling allowance. Provincial funds bore Rs. 1,30,963, local funds Rs. 1,50,618, municipal funds Rs. 37,402 and Native States Rs. 5,800. The average cost per successful case was Re. 0.9.2 against Re. 0.9.7 in 1921-22 and Re. 0.7.9 in 1920-21.

The average cost was doubled in Tavoy, Mergui, Myitkyina and the Hill District of Arakan. In the Chin Hills, Bhamo, Pegu, Thaton, Katha, Insein, Toungoo, Prome, Upper Chindwin and Southern Shan States the rate exceeded Re. 0.10.0. In view of the large number of vaccinations performed in the Arakan division the average cost in each district there was below the provincial average. Other districts in which a low rate obtained were Tharrawaddy, Henzada, Sagaing, Lower Chindwin, Kyaukse, Myingyan, Magwe and Minbu. The relatively high cost per successful vaccination is attributed to the drawing of arrears of pay due under the revised scale of pay of Vaccinators in many districts during 1922-23.

14. *Vaccine Dépôt, Meiktila.*—Captain Aung Tun and Sub-Assistant Surgeon Man Singh continued to hold charge throughout the year as Director and Assistant Director respectively. My thanks are due to them for the efficient manner in which they have performed their duties. It will be seen from the following table that although the number of calves used was less than that in the preceding triennium yet the average yield per calf and the number of doses issued were the highest for several years:—

Year.	No. of calves scraped.	Total yield in oz.	Average yield per calf (grains).	Doses issued.
1914-15	...	259.8	465.8	730,986
1915-16	345	256.6	351.9	723,314
1916-17	358	279.0	365.5	726,424
1917-18	435	340.0	342.2	660,793
1918-19	523	471.5	423.5	755,923
1919-20	484	410.6	407.2	1,068,553
1920-21	376	373.0	476.1	951,108
1921-22	305	284.7	446.95	899,460
1922-23	321	328.23	491.3	956,018

In 1922-23, 14 calves either failed to react or yielded lymph of poor quantity as against 25 in the previous year and 43 in the year before. Great difficulty was experienced in procuring a sufficient

number of calves, and the disparity between the supply and demand naturally raised the price of calves. The purchase price in 1922-23 of 303 calves was Rs. 3,939, and the feeding charges amounted to Rs. 2,630. The sum realized by the sale of 334 calves was Rs. 2,563. The net expenditure of the Vaccination Department in 1922-23 was Rs. 24,706, being Rs. 3,930 less than in 1921-22. The chief items of decrease were the salary of the Assistant Director who is a comparatively junior officer, and the reduced cost of European Stores. A sum of Rs. 289 was realized by sale of lymph and Rs. 735 have still to be recovered on this account.

The sales were as follows:—

	Doses.
Railway Medical Officers	... 2,799
Industrial Companies	... 8,077
Private Medical Practitioners	... 1,240
Tengyueh in China ...	... 6,741

The Military Department was supplied with 8,730 doses free.

There was less wastage of lymph than in previous years, but the loss is still serious. Over 50 per cent. of the lymph supply was wasted by the Sub-Assistant Surgeons of Pyu, Loikaw, Kalaw, Haka, Namhsam and the Medical Officers at Falim and Tiddim, and between 40 and 50 per cent. by the Civil Surgeons of Pegu, Mergui, Myitkyina, the Superintendent of Prome Jail, the Officer-in-charge, British Station Hospital, Mandalay, and the Assistant Superintendent, Mong Mai State.

No Supervisor was detailed for training during the year, owing to the anticipated early inauguration of a full course of training for Public Health Inspectors for which it was considered desirable to wait. A large number of Vaccinators totalling 78 were trained, as it was found necessary to have an adequate reserve of men of this class to replace casualties and to comply with urgent requisitions for additional help from districts threatened with small-pox. Employment has been found for most of the trained men. The quarters for the Assistant Director have been completed. The rooms vacated by him have been temporarily occupied by apprentice Vaccinators who have hitherto had much difficulty in obtaining suitable lodgings in the town. The only addition to the Depôt buildings was the provision of a small water supply tank on trestles.

15. *Rangoon Depôt*.—An average of 516.92 grains of pulp per calf was obtained from 52 calves, as against an average of 468.32 grains from 62 calves last year. Seed lymph to the extent of 5,200 grains was obtained from Meiktila.

Vaccine paste manufactured amounted to 44,840 grains. Of this 32,945 grains were issued to Corporation Vaccinators, 9,110 to private Practitioners, and 2,275 grains were destroyed.

The percentage of primary successful cases was 99.85 as compared with 99.73 in the preceding year. The net expenditure of the depôt was Rs. 3,517.

E. BISSET, Lieut.-Col., I.M.S.,

Offg. Superintendent-General of Vaccination, Burma.

RANGOON, the 18th May 1923.

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A.—VACCINATION

STATEMENT NO. I—Showing the particulars of Vaccination in the

DEPARTMENT.

Province of Burma during the year 1922-23 (Paragraphs 1, 2, 3, 4 and 6).

Un- known.	RE-VACCINATION.			PERCENTAGE OF SUCCESSFUL CASES IN WHICH THE RESULTS WERE KNOWN.		Persons successfully vaccinat- ed per 1,000 of population.	PERCENTAGE OF UN-KNOWN CASES TO TOTAL CASES.		AVERAGE ANNUAL NUMBER OF PERSONS SUCCESSFULLY VACCINATED DURING PREVIOUS FIVE YEARS.			AVERAGE AN- NUAL NUMBER OF DEATHS FROM SMALL-POX DUR- ING PREVIOUS FIVE YEARS.	No.	
	Total.	Success- ful.	Un- known.	Pri- mary.	Re-vac- cination.		Pri- mary.	Re- vacci- nation.	No.	Ratio per 1,000.	No.	Ratio per 1,000.		
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	
492	23,443	14,857	2,715	97.97	71.68	61.27	2.30	11.58	18,446	34.21	3	.01	1	
492	14,396	9,250	1,029	97.89	69.20	53.61	2.89	7.15	...	...	...	...	...
...	9,047	5,607	1,686	100.00	76.17	175.83	...	18.64	...	...	...	...	...
...	688	584	...	96.00	84.88	58.91	...	...	687	31.26	...	...	...
875	7,175	3,045	744	95.42	47.35	93.22	5.08	10.37	8,837	47.03	9	.05	2	
874	7,162	3,036	744	95.38	47.30	91.38	5.12	10.39	...	...	...	...	...
1	18	9	...	99.27	69.28	37.33	7.2	...	...	...	...	...	...
710	2,210	359	359	93.83	19.83	59.67	9.53	16.24	3,699	35.35	11	.10	4	
710	1,854	267	359	93.64	17.86	58.94	9.81	19.36	...	...	...	...	...
...	556	92	...	99.53	25.84	80.54	...	...	...	...	...	...	...
2,077	33,516	18,845	3,818	96.38	63.46	68.04	4.45	11.39	...	...	...	...	...
370	18,975	6,206	7,134	99.48	52.41	44.67	3.90	37.60	16,017	52.85	181	.60	5	
428	2,800	278	571	99.54	12.47	45.21	3.18	20.39	11,052	40.81	15	.05	6	
428	2,739	269	571	99.52	12.41	45.39	3.32	20.85	...	...	...	...	...
...	61	9	...	100.00	14.75	41.72	...	...	...	...	...	...	...
233	2,752	951	350	99.40	39.59	38.19	1.75	12.72	12,453	36.74	45	.18	7	
230	2,439	847	315	99.40	39.88	98.48	1.83	12.92	...	...	...	...	...
3	313	104	35	99.42	37.41	38.54	1.43	11.18	...	...	...	...	...
1,031	24,587	7,485	8,055	99.47	45.14	42.47	2.85	32.84	...	...	...	...	...
1,011	10,976	5,686	2,927	99.88	70.64	46.71	5.51	26.67	20,728	46.57	15	.03	8	
985	10,798	5,602	2,868	99.87	70.64	47.99	5.81	26.06	...	...	...	...	...
26	178	84	69	100.00	70.59	33.56	1.86	33.15	...	...	...	...	...
758	2,766	393	834	99.66	20.80	32.30	5.12	30.15	14,621	37.48	38	.10	9	
690	2,482	246	774	99.83	14.40	30.90	5.14	31.18	...	...	...	...	...
68	284	152	60	97.94	67.85	54.59	4.91	21.13	...	...	...	...	...
551	1,897	596	621	98.50	39.66	35.43	4.13	32.74	11,623	30.80	4	.01	10	
580	944	293	335	98.31	48.11	35.18	4.50	35.49	...	...	...	...	...
24	953	213	886	99.88	31.93	37.06	1.46	30.01	...	...	...	...	...
577	5,037	1,259	1,022	99.48	31.36	40.79	3.85	20.29	15,382	42.92	106	.38	11	
577	4,856	1,205	1,006	99.46	31.30	41.73	4.11	20.72	...	...	...	...	...
...	181	54	16	99.78	32.73	30.50	...	8.84	...	...	...	...	...
459	3,625	1,942	441	94.80	60.99	40.30	4.95	12.17	11,471	45.94	80	.32	12	
459	2,753	1,283	840	94.53	53.38	28.88	5.36	12.35	...	...	...	...	...
...	872	654	101	98.00	84.82	60.95	...	11.58	...	...	...	...	...
3,359	24,301	9,791	5,845	98.82	53.05	39.26	4.74	24.05	...	...	...	...	...
716	6,187	2,946	1,162	97.12	58.63	40.41	3.97	18.78	22,196	49.25	188	.42	13	
658	5,167	2,160	1,044	96.82	52.39	39.82	4.04	20.21	...	...	...	...	...
58	1,020	786	118	99.94	87.14	45.14	3.34	11.57	...	...	...	...	...
1,274	3,030	66	923	99.64	23.76	51.74	4.35	30.46	24,350	45.42	19	.04	14	
1,082	2,150	452	761	99.83	82.54	52.74	3.83	35.40	...	...	...	...	...
212	880	154	162	99.77	21.45	38.12	13.79	18.41	...	...	...	...	...
718	3,557	1,358	884	97.99	50.30	46.85	4.21	24.85	13,960	40.80	31	.09	15	
601	3,109	1,155	669	98.80	47.34	46.68	3.77	21.52	...	...	...	...	...
117	448	203	215	85.20	87.12	49.80	10.67	47.99	...	...	...	...	...
241	5,459	1,481	453	99.72	28.59	64.51	1.20	8.80	17,266	55.70	30	.10	16	
210	4,816	1,303	194	99.71	28.11	66.21	1.08	4.03	...	...	...	...	...
31	643	128	259	100.00	38.33	39.10	4.24	40.28	...	...	...	...	...
46	1,371	338	217	99.93	33.62	67.77	2.24	15.83	10,832	41.22	34	.13	17	
29	956	212	203	99.96	32.14	67.73	1.16	21.23	...	...	...	...	...
17	415	146	14	99.41	36.41	68.16	1.66	8.37	...	...	...	...	...
2,995	19,604	6,729	3,639	99.01	42.15	52.47	2.89	18.56	...	...	...	...	...

A.—VACCINATION

STATEMENT No. I—Showing the particulars of Vaccination in the

No.	Districts.	Population of districts according to census of 1921.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	PRIMARY VACCINATION			
					(4)	(5)	(6)		Total.	Under one year.	One and under six years.	Total of all ages.
(1)	(2)	(3)	(7)	(12)	(13)	(14)	(15)	(16)	(8)	(9)	(10)	(11)
TENASSERIM DIVISION.												
18	Salween District	50,379	19	2	2,685	1,428	4,113	2,057	2,844	201	523	2,712
19	Thaton District	471,100	98	12	9,608	9,372	18,978	1,582	15,238	4,397	7,014	14,634
	Rural	448,841		10	8,587	8,707	17,294	1,729	14,604	3,941	6,909	14,4054
	Urban	22,259		2	1,019	665	1,684	842	634	456	105	580
20	Amherst District	417,910	69	11	15,234	12,268	27,502	2,499	13,188†	3,542	5,575	12,235
	Rural	350,022		8	10,453	10,660	21,113	2,640	11,542	2,049	5,529	10,639
	Urban	67,888		3	4,781	1,608	6,389	2,130	1,646†	1,533	46	1,598
21	Tavoy District	156,786	30	6	3,778	3,813	7,641	1,274	6,331*	4,62	1,851	6,167
	Rural	129,306		4	3,376	3,419	6,795	1,699	5,532*	3,285	1,838	5,376
	Urban	27,480		2	402	441	816	423	799	777	13	791
22	Mergui District	135,465	14	5	2,788	2,653	5,441	1,088	4,436	1,028	1,857	3,703
	Rural	118,168		4	2,213	2,31	4,514	1,129	3,801	659	1,744	3,149
	Urban	17,297		1	575	352	927	927	635	369	143	564
	Total	1,281,640	42	36	34,091	29,584	63,675	1,768	42,037	18,230	18,850	39,451
NORTH-WEST BORDER DIVISION.												
23	Pakokku District	485,814	52	10	10,515	10,75	21,220	2,122	15,872	7,391	6,079	14,177
	Rural	466,307		9	10,076	10,335	20,461	2,273	15,434	7,195	5,968	13,826
	Urban	19,507		1	433	320	769	759	438	196	111	351
24	Katha District	253,725	28	6	6,218	6,428	12,844	2,107	10,587	1,763	7,876	9,694
25	Shwebo District	391,284	68	10	7,944	8,428	16,372	1,657	15,943	3,228	10,493	14,800
	Rural	377,937		9	7,670	8,136	15,806	1,766	15,466	8,07	10,297	14,359
	Urban	13,347		1	274	222	666	666	477	221	196	441
26	Sagaing District	326,908	180	7	10,401	12,358	22,759	3,201	16,896	8,274	8,320	16,683
	Rural	315,050		6	9,668	11,697	21,065	3,594	16,457	8,059	8,104	16,248
	Urban	11,868		1	633	661	1,194	1,194	439	215	216	435
27	Lower Chindwin District	342,880	99	6	8,645	9,260	17,945	2,984	10,884*	8,023	2,594	10,793
	Rural	333,655		5	8,128	9,040	17,168	8,434	10,581*	7,782	2,563	10,502
	Urban	9,225		1	517	220	737	737	80*	211	31	291
28	Upper Chindwin District	178,245	11	6	5,857	5,542	11,199	1,867	10,395	704	6,518	9,957
29	Chin Hills District	110,079	14	8	2,352	1,685	4,037	1,346	3,881	141	1,395	2,470
	Total	2,089,935	39	48	51,732	54,404	105,186	2,211	84,458	29,524	48,275	78,574
MANDALAY DIVISION.												
30	Mandalay District	356,621	166	11	12,289	12,311	24,600	2,236	19,298	9,849	5,578	15,731
	Rural	187,707		5	6,216	6,952	13,168	2,031	11,829	3,888	4,218	8,263
	Urban	168,914		6	6,073	5,353	11,432	1,95	7,469	5,961	1,360	7,468
31	Kyaikse District	142,677	111	9	3,931	3,768	8,699	2,900	4,860	3,613	1,099	4,794
	Rural	138,670		2	219	117	336	536	232	207	25	232
	Urban	6,107		1	4,480	4,529	9,009	1,802	8,493	2,274	5,873	8,373
32	Meiktila District	289,897	127	5	4,231	4,321	8,562	2,198	8,060	2,021	5,734	7,968
	Rural	281,029		4	249	208	487	457	483	203	139	410
	Urban	8,868		1	6,939	7,065	14,004	2,001	12,578	5,204	5,669	11,268
33	Yamethin District	323,189	77	7	5,337	5,941	11,278	2,256	11,278	4,663	4,554	10,644
	Rural	294,730		5	1,602	1,124	2,726	1,368	1,300	688	485	1,224
	Urban	28,459		2	10,745	10,184	20,929	2,900	16,224	6,754	6,191	15,491
34	Myingyan District	442,008	161	7	9,967	9,583	19,566	3,911	15,522	6,308	6,624	14,828
	Rural	415,983		5	778	596	1,374	687	72	446	167	663
	Urban	26,025		2	17,510	14,767	32,277	8,586	21,507	6,798	13,415	2,213
35	Magwe District	423,254	115	9	15,203	13,73	28,276	4,713	19,086	6,007	12,647	18,654
	Rural	394,612		6	2,307	1,694	4,01	1,334	1,871	791	768	1,559
	Urban	23,640		3	7,03	7,291	14,354	2,051	11,775	4,784	4,449	10,189
36	Minbu District	274,302	83	7	6,503	6,780	13,23	2,647	11,161	4,511	4,296	9,73
	Rural	262,065		5	560	561	1,121	561	614	273	163	618
	Urban	12,237		2								
	Total	2,251,946	115	49	62,957	60,915	123,872	2,528	54,785	39,336	41,674	86,064

DEPARTMENT.

Province of Burma during the year 1922-23 (Paragraphs 1, 2, 3, 4 and 6).

Un- known.	Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.		No.
	Total.	Success- ful.	Un- known.	Pri- mary.	Re- vacci- nation.		Pri- mary.	Re- vacci- nation.	No.	Ratio per 1,000.	No.	Ratio per 1,000.	
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
...	1,269	540	...	95.36	42.55	84.55	...	...	1,840	38.86	...	...	18
584	3,740	1,409	791	99.86	47.78	34.05	3.83	21.15	19,938	47.12	96	.23	19
530	2,690	894	524	99.86	41.27	33.80	3.83	19.48	...	...	...	...	...
51	1,050	515	267	100.00	61.94	49.19	8.52	25.43	...	...	...	...	...
667	14,314	5,313	1,726	97.72	42.21	41.99	5.06	12.06	25,142	66.53	118	.31	20
647	9,571	3,163	1,256	97.65	38.04	33.43	5.61	13.12	...	...	...	...	...
20	4,743	2,150	470	98.15	50.32	55.18	1.22	9.91	...	...	...	...	...
68	1,382	721	174	99.53	59.69	43.93	1.05	12.59	6,423	46.01	...	...	21
66	1,335	685	174	99.67	59.00	46.87	1.21	13.03	...	...	...	...	...
...	47	36	...	99.00	76.60	30.09	...	...	...	...	...	...	...
318	1,005	457	111	89.92	51.12	30.71	7.17	11.04	5,889	50.67	92	.84	22
214	713	807	47	88.53	46.10	29.25	6.42	6.59	...	...	...	...	...
74	292	150	64	98.75	65.79	40.70	11.65	21.92	...	...	...	...	...
1,635	21,710	8,440	2,802	97.82	44.64	33.88	3.90	12.91	...	...	...	...	...
796	5,348	673	443	94.04	13.72	30.57	5.02	8.23	18,259	40.93	27	.06	23
740	5,027	640	376	94.09	18.76	31.02	4.79	7.48	...	...	...	...	...
56	321	33	67	91.88	12.99	19.69	12.79	20.87	...	...	...	...	...
596	2,057	645	272	97.03	26.13	40.75	5.63	13.22	8,484	34.93	...	...	...
266	429	222	14	94.41	53.49	38.39	1.67	3.26	19,025	35.85	48	.14	24
245	340	196	7	94.31	58.86	33.51	1.53	2.06	...	...	...	...	25
21	.89	26	7	96.71	31.71	81.99	4.40	1.87	...	...	...	...	...
131	5,863	3,750	532	99.51	70.34	62.50	.78	9.07	21,212	67.83	71	.23	26
128	5,108	3,165	532	99.50	69.12	61.62	.08	10.42	...	...	...	...	27
3	755	585	..	99.77	77.48	86.02	.63	...	...	...	...	...	...
...	7,079	5,563	287	99.70	81.91	47.70	...	4.05	15,113	47.00	21	.06	27
...	6,641	5,136	287	99.76	80.83	46.87	...	4.32	...	...	...	...	28
...	438	427	...	97.82	97.49	77.83	...	...	...	...	...	...	...
268	804	611	96	88.32	86.30	58.96	2.58	11.94	9,149	53.08	...	...	29
1,331	156	58	65	96.86	63.74	22.97	34.30	41.67	2,109	17.92	...	...	29
3,388	21,736	11,522	1,709	96.99	67.53	43.11	4.01	7.86	...	...	...	...	...
3,493	5,902	1,938	1,214	99.53	47.41	49.55	18.10	22.90	19,655	57.15	277	.81	30
3,492	1,339	306	727	99.11	50.00	45.65	29.52	54.29	...	...	...	...	...
1	3,963	1,632	487	100.00	46.95	53.87	.01	12.29	...	...	...	...	31
57	3,839	3,044	510	99.81	91.44	54.94	1.17	13.28	5,226	35.88	3	.01	31
57	8,735	2,972	480	99.80	91.30	55.17	1.23	12.85	...	...	...	...	...
...	104	72	30	100.00	97.30	49.78	...	28.85	...	...	...	...	...
114	516	128	188	99.99	39.02	29.31	1.31	36.43	9,454	33.45	24	.09	32
91	492	116	177	99.99	36.83	28.77	1.18	35.98	...	...	...	...	...
23	24	12	11	100.00	92.81	47.59	5.31	45.83	...	...	...	...	...
636	1,426	495	371	94.35	46.92	36.40	5.06	26.02	41,728	131.72	10	.03	33
575	...	...	...	93.81	...	34.08	5.10	...	...	...	...	...	...
61	1,426	495	371	98.79	46.92	60.40	4.69	26.02	...	...	...	...	...
368	4,705	2,834	549	97.70	56.16	40.33	2.27	11.67	10,887	26.69	183	.45	34
360	4,033	2,206	470	97.30	61.91	40.96	2.32	11.65	...	...	...	...	...
8	672	128	79	95.53	21.59	30.39	1.14	11.76	...	...	...	...	...
1,091	10,770	4,677	2,493	99.01	58.51	58.81	5.07	23.15	12,880	34.57	14	.04	35
784	8,640	3,869	1,695	98.95	65.71	56.36	3.99	19.62	...	...	...	...	...
307	2,130	808	798	99.68	60.66	100.13	16.41	37.46	...	...	...	...	...
1,152	2,579	1,142	371	95.91	51.72	41.31	9.78	14.39	8,297	31.23	21	.08	36
10,77	2,072	922	246	95.92	50.49	40.81	9.65	11.87	...	...	...	...	...
75	507	220	125	95.73	57.59	60.15	12.21	24.65	...	...	...	...	...
6,911	29,137	13,758	5,696	98.00	58.89	44.33	7.30	19.55	...	...	...	...	...

A.—VACCINATION

STATEMENT No. I—Showing particulars of Vaccination in the

No.	Districts.	Population of districts according to census of 1921.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator	PRIMARY VACCINATION.			
					(6)	(7)	(8)		Total.	Under one year.	One and under six years.	Total of all ages.
(1)	(2)	(3)	(4)	(5)					(9)	(10)	(11)	
NORTH-EAST FRONTIER DIVISION.												
87	Putao District	... 7,673	38	...	263	79	342	...	202†	21	84	173
88	Myitkyina District	... 118,382	11	2	1,181	872	2,053	1,027	1,890	155	917	1,694
39	Bhamo District	... 112,960	16	4	2,022	1,711	3,733	933	3,353	527	1,878	8,184
	Rural	... 105,219	...	3	1,730	1,589	3,319	1,106	3,106	373	1,619	2,903
	Urban	... 7,741	...	1	292	122	414	414	247	154	59	281
40	Northern Shan States	... 559,223	28	14	6,510	8,736	15,246	1,089	14,835	5,001	4,448	18,652
41	Southern Shan States	... 911,468	23	19	11,503	11,643	23,146	1,218	21,940	819	9,649	21,042
	Total	... 1,709,706	22	39	21,479	23,041	44,520	1,142	42,240	6,523	16,776	39,695
GRAND TOTAL, FOR 1922-23.												
	Rural	... 11,950,022	..	259	297,969	306,074	603,983	2,332	478,676	123,450	239,338	447,941
	Urban	... 1,219,077	...	77	62,437	31,271	93,708	1,217	42,342†	26,092	11,299	40,268
GRAND TOTAL, FOR 1921-22.												
GRAND TOTAL, FOR 1920-21.												

* Secondary operation

† Work done by other

‡ Includes Vaccination by Rangoon Cantonment

§ Does not include Steamer Vaccination

DEPARTMENT.

Province of Burma during the year 1922-23. (Paragraphs 1, 2, 3, 4, and 6).

Un-known.	RE-VACCINATION.			PERCENTAGE OF SUCCESSFUL CASES IN WHICH THE RESULTS WERE KNOWN.		Persons successfully vaccinated per 1,000 of population.	PERCENTAGE OF UN-KNOWN CASES TO TOTAL CASES.		AVERAGE ANNUAL NUMBER OF PERSONS SUCCESSFULLY VACCINATED DURING PREVIOUS FIVE YEARS.			AVERAGE ANNUAL NUMBER OF DEATHS FROM SMALL-POX DURING PREVIOUS FIVE YEARS.			No.
	Total.	Success- ful.	Un- known.	Primary.	Re-vac- cination.		Primary.	Re-vacci- nation.	No.	Ratio per 1,000.	No.	Ratio per 1,000.			
	(12)	(18)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	
29	1401	91	18	100.00	74.59	34.41	14.36	12.86	348	13.22	...	...	37	
156	163	76	29	94.23	56.72	14.44	8.25	17.79	2,393	25.97	...	...	88	
149	380	233	39	97.82	68.39	29.81	4.44	10.26	3,239	29.76	...	...	39	
184	213	120	17	97.08	61.22	28.73	4.31	7.98	...	...	...	...	...
15	167	113	22	99.57	77.93	44.44	6.07	13.17	...	...	...	...	...
1,037	391	263	35	98.80	79.49	24.92	6.98	8.95	11,249	21.57	...	...	40	
442	1,206	652	98	97.88	68.84	23.80	2.01	8.13	14,722	16.31	...	...	41	
1,813	2,280	1,935	219	98.04	64.77	23.96	4.29	9.61	...	...	...	...	...
23,209	176,811	77,855	81,783	98.10	53.68	42.98	4.46	17.98	520,231	42.12	1,818	•18			
21,564	125,414	55,852	18,840	98.02	52.39	42.18	4.51	15.02	...	...	...	...	...
1,645	51,367	22,003	12,943	98.95	57.26	51.08	3.33	25.20	...	...	...	...	...
24,247	158,781	76,786	29,153	98.07	58.46	40.53	4.94	18.96	501,615	41.90	1,757	•18			
21,449	188,731	88,258	30,298	97.48	65.70	44.19	4.45	16.05	473,667	39.02	1,229	•13			

tions included.

agencies included.

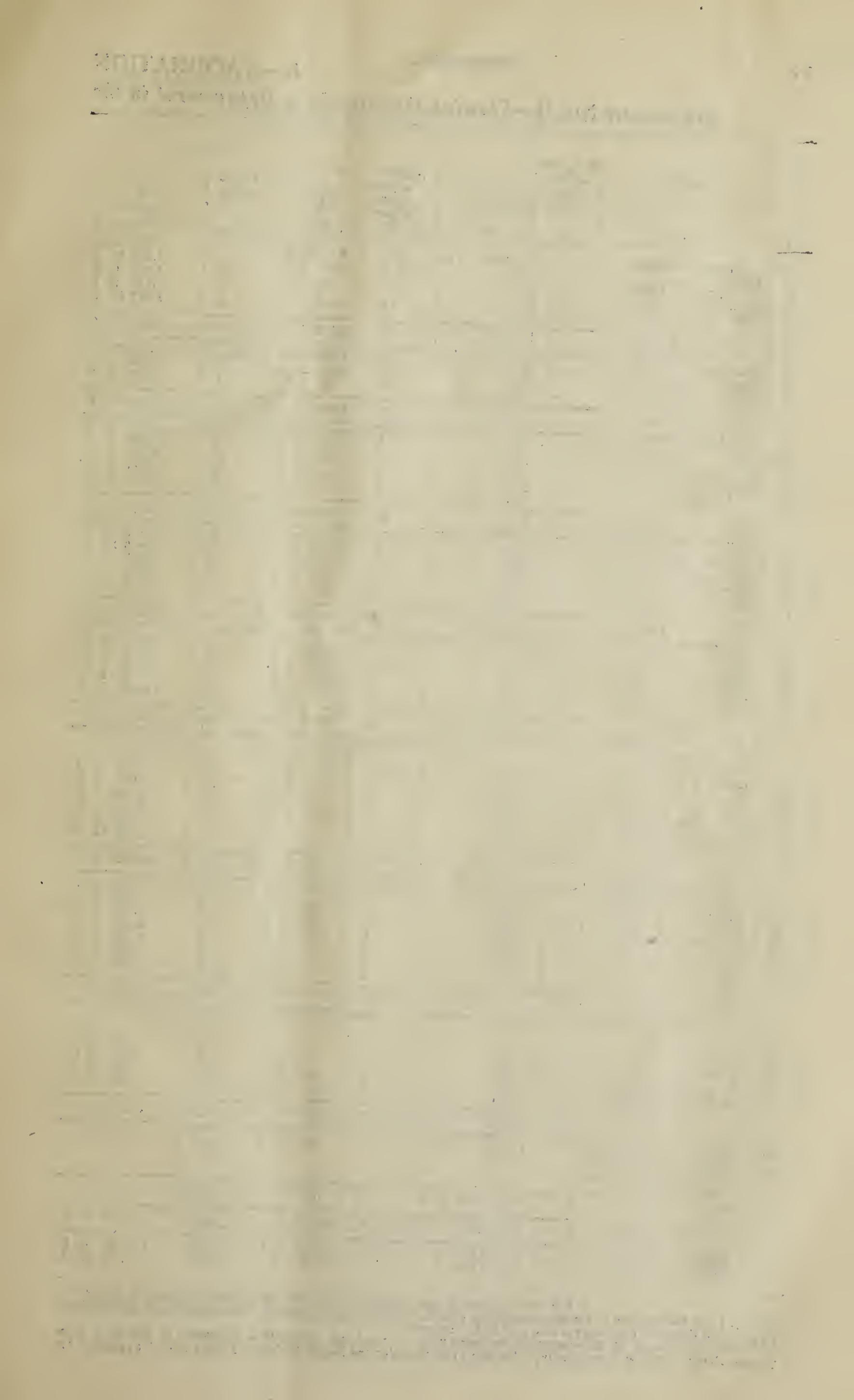
Vaccinator and other agencies.

18,142 persons (male) of which results in 18,142 cases were unknown

SUMMARY.

APPENDICES.

Total number of persons vaccinated.	Total number of operations performed.	Percentage of successful cases in which results were known.		Average number of persons vaccinated by each vaccinator.	Number of children successfully vaccinated.	Ratio of successful vaccinations per 1,000 of population.		Total cost of Department.	Average cost of each successful case.
		Primary.	Re-vaccination.			Under one year.	One under six years.		
By Special Staff (Statement I) ...	519,873	173,219	520,011	173,219	98.11	53.69	326	149,398	256,215
By Dispensary Staff (Statement III)	2,883	1,747	2,883	1,747	99.3	76.99	...	397	1,025
By Other Agencies, if any ...	1,007	3,592	1,007	3,592	99.30	51.72	...	144	422
Total for 1922-23 ...	523,763	178,558	523,901	178,558	98.10	53.80	336	2,063	251,662
Total for 1921-22 ...	494,839	160,990	494,960	160,990	98.08	58.44	837	1,907	143,173
Total for 1920-21 ...	483,522	190,961	483,707	190,961	97.48	55.67	346	1,931	124,526



A.—VACCINATION

STATEMENT NO. II.—Showing the cost of the Department in the

No.	Districts.	European super-vising officers.	Pay.		Native super-vising officers (5)	Pay.	Vaccinators.	Pay.
			(1)	(2)				
1	ARAKAN DIVISION.							
1	Akyab	...	...	1	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
2	Hill District of Arakan	...	...	...	600 0 0	11	4,553 13 3	1,295 0 0
3	Kyaupkyu	...	...	...	...	2	2,613 9 3	1,621 13 0
4	Sandoway	...	...	1	803 1 0	4	9,889 8 6	
	Total	...	...	2	1,403 1 0	23		
5	RANGOON DIVISION.							
5	Rangoon	...	...	5	1,500 0 0	18(a)	2,752 15 0	
6	Insein	...	...	2	2,100 0 0	6	3,825 0 0	
7	Hanthawaddy	...	...	2	720 0 0	8	4,065 15 6	
	Total	...	...	9	4,320 0 0	30	10,643 11 6	
8	PELOU DIVISION.							
8	Tharrawaddy	...	...	6	1,260 0 0	8	3,087 8 8	
9	Pegu	...	...	2	1,500 0 0	8	4,690 4 0	
10	Prome	...	...	1	1,200 0 0	12	6,815 2 11	
11	Toungoo	...	...	4	1,416 14 0	18	5,125 8 7	
12	Thayetmyo	...	...	2	1,320 0 0	8	3,657 8 11	
	Total	...	...	15	6,896 14 0	49	23,371 1 1	
13	IRRAWADDY DIVISION.							
13	Bassein	...	...	3	1,740 0 0	14	6,490 13 0	
14	Henzada	...	...	4	1,820 0 0	14	6,266 13 0	
15	Myaungmya	...	...	5	1,118 15 0	15	5,658 7 0	
16	Ma-ubin	...	...	4	2,040 0 0	9	4,989 0 0	
17	Pyapon	...	...	4	1,410 0 0	10	3,976 0 0	
	Total	...	...	20	7,658 15 0	62	27,331 0 0	
18	TEHASSERIM DIVISION.							
18	Salween	...	...	...	...	2	1,195 14 0	
19	Thaton	...	...	2	1,230 5 0	12	6,780 15 6	
20	Amherst	...	...	5	1,358 4 0	11	5,156 7 10	
21	Tavoy	...	...	1	1,200 0 0	6	3,703 2 6	
22	Mergui	...	...	1	900 0 0	5	2,323 15 0	
	Total	...	...	9	4,688 9 0	36	19,060 6 10	
23	NORTH-WEST BORDER DIVISION.							
23	Pakokku	...	...	1	1,218 9 0	10	4,519 6 0	
24	Katha	...	...	2	2,240 0 0	6	3,568 3 4	
25	Shwebo	...	...	1	900 0 0	10	4,296 2 0	
26	Sagaing	...	...	1	708 0 0	7	8,826 6 0	
27	Lower Chindwin	...	...	1	1,200 0 0	6	2,763 7 0	
28	Upper Chindwin	...	...	1	1,170 0 0	6	4,715 2 0	
29	Chin Hills	...	...	...	...	3	1,702 14 0	
	Total	...	...	7	7,436 9 0	48	25,391 8 4	
30	MANDALAY DIVISION.							
30	Mandalay	...	...	1	900 0 0	11	5,622 10 1	
31	Kyaukse	...	...	1	600 0 0	3	1,464 0 0	
32	Meiktila	...	...	1	900 0 0	5	2,600 9 0	
33	Yamethin	...	...	2	1,070 0 0	7	3,968 1 0	
34	Myingyan	...	...	3	600 0 0	7	3,194 0 5	
35	Magwe	...	...	2	240 0 0	9	3,823 8 6	
36	Minbu	...	...	2	220 12 0	7	2,906 5 9	
	Total	...	...	12	4,530 12 0	49	22,574 2 9	
37	NORTH-EAST FRONTIER DIVISION.							
37	Putao	...	...	...	...	...	1,867 12 9	
38	Myitkyina	...	...	...	...	2	2,405 12 11	
39	Bhamo	...	...	...	...	4		
40	Northern Shan States	...	...	1	480 0 0	14	5,184 0 0	
41	Southern Shan States	...	...	2	1,640 0 0	19	6,921 12 0	
	Total	...	...	3	2,120 0 0	39	16,439 5 8	
42	Meiktila Vaccine Depôt	1	1,800 0 0	1	1,680 0 0	...	...
43	Office of the Superintendent-General of Vaccination, Burma.	...	...	...	...	...	...
	Total	1	1,800 0 0	1	1,680 0 0	...	...
	GRAND TOTAL	1	1,800 0 0	78	40,534 12 0	336	154,700 9 8	
1921-22	...	1	1,800 0 0	87	45,178 6 11	837	1,43,729 9 6	
1920-21	...	1	1,800 0 0	81	37,820 1 5	347	1,14,194 12 11	

* The average cost in this column is calculated on the total number of successful

(a) No share of pay of the Superintendent, Vaccine Depôt, 2 Female Registrar-Vaccinators and 12 Assistant employed in Rangoon Cantonment was paid by Government.

(b) This includes 81 Sub-Assistant Surgeons who are receiving Vaccination allowance, or who have been Vaccine Depôt, Rangoon Municipality, 1 Assistant Director, Vaccine Depôt, Meiktila 1 State official appointed by

DEPARTMENT.

Province of Burma during the year 1922-23 (Paragraph 13).

Expenditure.

Clerks. (9)	Pay. (10)	Peons, etc. (11)	Pay. (12)	Total pay of establishment. (13)	Travelling allowance. (14)	Contingen- cies. (15)	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
	Rs. A. P. (10)		Rs. A. P. (12)	Rs. A. P. (13)	Rs. A. P. (14)	Rs. A. P. (15)	
...	5,153 12 3	3,171 8 0	853 15 0	1
...	1,295 0 0	388 7 0	...	2
...	2,618 9 3	1,488 8 0	2 10 0	3
...	2,324 14 0	824 2 0	62 5 0	4
...	11,292 8 6	5,872 9 0	417 14 0	
...	...	4	858 0 0	5,110 15 0	228 0 9	3,682 6 8	5
...	5,925 0 0	4,140 12 0	86 5 0	6
...	4,785 15 6	3,610 9 0	81 15 0	7
...	4	858 0 0	15,821 14 6	7,979 5 9	3,850 10 8		
...	4,347 8 8	2,707 14 6	100 0 0	8
...	6,190 4 0	5,126 9 0	287 14 6	9
...	8,010 2 11	2,509 5 6	...	10
...	6,542 6 7	3,340 0 0	205 8 0	11
...	4,977 8 11	2,167 2 0	75 5 0	12
...	30,067 15 1	15,850 15 0	668 11 6	
...	8,280 13 0	8,895 10 6	40 8 6	13
...	7,586 12 0	3,580 12 0	31 9 0	14
...	6,777 6 0	3,347 4 0	100 15 0	15
...	6,979 0 0	8,859 13 0	...	16
...	5,416 0 0	2,829 1 0	18 10 0	17
...	34,989 15 0	18,012 8 6	191 10 6	
...	1,195 14 0	545 4 0	...	18
...	8,011 4 6	4,962 2 6	...	19
...	6,514 11 10	2,794 7 0	542 10 6	20
...	4,903 2 6	2,677 4 0	167 0 0	21
...	3,123 15 0	1,660 1 0	103 8 0	22
...	23,748 15 10	12,639 2 6	813 2 6	
...	1	222 0 0	5,959 15 0	3,146 15 0	19 13 0		23
...	5,808 3 4	2,426 10 0	...	24
...	5,196 2 0	2,377 7 8	...	25
...	4,584 6 0	1,726 4 0	12 10 0	26
...	3,968 7 0	1,375 0 0	3 2 6	27
...	5,885 2 0	1,944 2 0	...	28
...	1,702 14 0	712 12 0	...	29
...	1	222 0 0	83,050 1 4	13,709 2 6	35 0 6		
...	6,522 10 1	1,525 9 0	108 4 0	30
...	2,064 0 0	1,024 3 0	5 0 0	31
...	3,600 9 0	1,598 4 0	35 0 0	32
...	4,038 1 0	2,102 2 8	...	33
...	3,794 0 5	2,085 12 6	...	34
...	4,663 8 6	1,198 5 0	...	35
...	3,127 1 9	947 9 0	14 0 0	36
...	27,104 14 9	10,481 13 2	162 4 0	
...	
...	1,867 12 9	303 6 0	...	37
...	2,465 12 11	697 3 0	...	38
...	...	7	1,769 4 0	5,664 0 0	2,931 0 0	8 0 0	39
...	...	7	1,759 4 0	10,321 0 0	4,154 7 0	5 0 0	40
2	8,607 7 0	...	...	12,187 7 0	...	65 14 0	41
...	
2	8,607 7 0	12	2,839 4 0	208,482 0 8	92,631 8 5	15,471 4 2	42
2	8,607 7 0	12	2,295 4 4	1,99,951 3 9	8,863 15 0	1,978 14 0	43
1	6,953 15 0	13	2,291 8 6	1,61,508 1 4	75,501 4 10	27,602 7 5	
4	5,457 10 6	12	2,295 8 6			21,029 0 5	

vaccination and re-vaccination performed by special staff only.

Registrar-Vaccinators of Rangoon Municipality have been included in the cost. Out of 15, only 1 Vaccinator

appointed as whole-time officers for supervising vaccination and vital statistics work, 1 Superintendent charge of the *Shweta* of Hsipaw State, 49 Supervisors of Vaccination and 1 Head Vaccinator.

A.—VACCINATION

STATEMENT NO. II—Showing the cost of the Department in the

No.	Districts.	Expenditure.			Paid
		Total Cost.	Imperial Funds.	Provincial Funds.	
		(16)	(17)	(18)	(19)
	ARAKAN DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1	Akyab	8,678 3 3	...	1,683 7 0	7,575 1 0
2	Hill District of Arakan	1,683 7 0	...	1,683 7 0	1,683 7 0
3	Kyaukpyu	4,009 11 3	...	...	3,820 14 7
4	Sandoway	3,211 5 0	...	...	3,067 5 0
	Total	17,582 10 6	...	1,683 7 0	14,463 4 7
	RANGOON DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
5	Rangoon	9,921 6 5	...	791 7 0	9,185 5 0
6	Insein	10,152 1 0	...	...	7,590 13 0
7	Hanthawaddy	8,478 7 6	...	...	...
	Total	27,651 14 11	...	791 7 0	16,779 2 0
	PEGU DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
8	Tharrawaddy	7,155 7 2	...	...	6,195 7 2
9	Pegu	11,604 11 6	...	...	10,404 11 6
10	Prome	10,519 8 5	...	...	8,671 8 5
11	Toungoo	10,087 14 7	...	...	8,737 2 0
12	Thayetmyo	7,219 15 11	...	...	6,163 15 11
	Total	46,587 9 7	...	...	40,472 13 0
	IRRAWADDY DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
13	Bassein	11,967 0 0	...	...	9,425 10 6
14	Henzada	11,119 1 0	...	...	10,103 15 0
15	Myaungmya	10,225 9 0	...	...	8,871 5 0
16	Ma-ubin	10,838 13 0	...	...	10,058 8 0
17	Pyapón	9,263 11 0	...	...	8,228 11 0
	Total	53,194 2 0	...	...	46,688 1 6
	TENASSERIM DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
18	Salween	1,741 2 0	...	674 3 0	1,066 15 0
19	Thatón	12,973 7 0	...	...	12,335 9 4
20	Amherst	9,851 13 4	...	...	7,336 5 1
21	Tavoy	7,747 6 6	...	...	7,037 7 8
22	Mergui	4,837 8 0	...	...	4,438 4 0
	Total	37,201 4 10	...	674 3 0	32,214 8 11
	NORTH-WEST BORDER DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
23	Pakokku	9,126 11 0	...	8,483 2 0	...
24	Katha	8,234 13 4	...	8,234 13 4	...
25	Shwebo	7,573 9 6	...	7,206 7 6	...
26	Sagaing	6,278 4 0	...	5,720 14 0	...
27	Lower Chindwin	5,341 9 6	...	4,995 13 6	...
28	Upper Chindwin	7,929 4 0	...	7,829 4 0	...
29	Chin Hills	2,415 10 0	...	2,415 10 0	...
	Total	46,794 13 4	...	44,886 0 4	...
	MANDALAY DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
30	Mandalay	8,156 7 1	...	5,284 5 0	...
31	Kyaukse	3,093 3 0	...	3,093 3 0	...
32	Meiktila	5,133 13 0	...	4,699 13 0	...
33	Yamethin	6,135 3 8	...	5,217 2 8	...
34	Myingyan	5,879 12 11	...	5,063 12 11	...
35	Magwe	5,261 13 6	...	4,808 13 6	...
36	Minbu	4,088 10 9	...	2,997 9 0	...
	Total	37,748 15 11	...	31,144 11 1	...
	NORTH-EAST FRONTIER DIVISION.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
37	Putao	...	...	...	...
38	Myitkyina	2,171 2 9	...	2,171 2 9	...
39	Bhamo	3,170 15 11	...	2,732 10 9	...
40	Northern Shan States	8,600 0 0	...	5,971 0 0	...
41	Southern Shan States	14,541 5 0	...	11,370 6 0	...
	Total	28,483 7 8	...	22,245 3 6	...
42	Meiktila Vaccine Depôt	27,558 11 2	...	27,558 11 2	...
43	Office of the Superintendent-General of Vaccination, Burma.	1,978 14 0	...	1,978 14 0	...
	Total	29,537 9 2	...	29,537 9 2	...
	GRAND TOTAL	3,21,782 7 11	...	1,30,982 9 1	1,50,617 14 0
1921-22		3,16,417 10 2	...	1,25,931 6 5	1,14,175 5 11
1920-21		2,58,101 6 7	...	96,585 4 9	1,16,396 10 1

* The average cost in this column is calculated on the total number of successful

(a) No share of pay of the Superintendent, Vaccine Depôt, 8 Female Registrar-Vaccinators and 18 Assistant employed in Rangoon Cantonment was paid by Government.

(b) This includes 81 Sub-Assistant Surgeons who are receiving Vaccination allowance, or who have been Vaccine Depôt, Rangoon Municipality, 1 Assistant Director, Vaccine Depôt, Meiktila, 1 State official

DEPARTMENT.

Province of Burma during the year 1922-23 (Paragraph 13).

from	Municipalities.	Native States.	Total.	Number of all successful vaccinations and revaccinations.	Average cost of each successful case.	No.
	(20)	(21)	(22)	(23)	(24)	(25)
	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.	
	1,103 2 8	...	8,678 8 3	35,319	0 3 11	1
...	1,683 7 0	1,232	1 5 10	2
188 12 8	9,009 11 3	18,638	0 8 5	3
141 0 0	3,211 5 0	6,685	0 7 8	4
1,485 14 11	17,584 10 6	61,869	0 4 7	
8,229 15 5	9,021 6 5	14,831	0 9 9	5
963 12 0	10,152 1 0	13,251	0 12 9	6
887 10 6	8,178 7 6	13,926	0 9 9	7
10,081 5 11	27,651 14 11	42,008	0 10 6	
660 0 0	7,155 7 2	23,004	0 5 0	8
1,200 0 0	11,604 11 6	13,888	0 13 4	9
1,818 0 0	10,519 8 5	13,168	0 12 9	10
1,350 12 7	10,187 14 7	15,578	0 10 4	11
1,056 0 0	7,219 15 11	10,244	0 11 3	12
6,114 12 7	46,587 9 7	75,930	0 9 10	
2,241 5 8	11,837 0 0	19,779	0 9 5	13
1,095 2 0	11,199 1 0	23,55	0 6 3	14
1,364 4 0	10,225 9 0	17,962	0 9 5	15
780 5 0	10,88 13 0	21,294	0 8 2	16
1,035 0 0	9,263 11 0	19,685	0 7 7	17
6,506 0 6	53,194 2 0	1,06,525	0 8 0	
...	1,741 2 0	3,252	0 8 7	18
637 13 8	12,073 7 0	16,043	0 13 11	19
2,515 8 3	9,831 13 4	17,531	0 9 0	20
709 15 0	7,747 6 6	6,888	1 2 0	21
449 4 0	4,887 8 0	4,160	1 2 10	22
4,312 8 11	37,301 4 10	47,874	0 12 5	
643 9 0	9,126 11 0	14,850	0 9 10	23
...	8,234 13 4	10,839	0 12 9	24
367 2 0	7,573 9 6	15,022	0 8 1	25
552 6 0	6,173 4 0	20,433	0 4 11	26
845 12 0	5,341 9 6	16,356	0 5 3	27
...	7,820 4 0	10,668	0 11 10	28
...	2,415 10 0	2,528	0 15 3	29
1,908 13 0	46,794 13 4	90,096	0 8 4	
2,892 2 1	8,156 7 1	17,669	0 7 5	30
...	3,93 3 0	7,838	0 6 4	31
434 0 0	5,133 13 0	8,506	0 9 8	32
918 1 0	6,185 3 8	11,703	0 8 4	33
816 0 0	5,879 12 11	17,825	0 5 3	34
453 0 0	5,261 13 6	24,890	0 8 5	35
1,051 1 9	4,088 10 9	11,331	0 5 9	36
6,604 4 10	37,748 15 11	99,822	0 6 1	
...	37
...	2,171 2 9	1,710	1 4 4	38
488 5 2	3,170 15 11	3,367	0 15 1	39
...	8,500 0 0	13,935	0 9 10	40
...	14,541 5 0	21,694	0 10 9	41
485 5 2	5,799 15 0	...	28,483 7 8	40,706	0 11 2	
...	27,558 11 2	...	...	42
...	1,978 14 0	...	...	43
...	
87,402 1 10	5,799 15 0	...	29,537 9 8	...	...
89,063 14 6	7,256 15 4	...	3,16,417 10 2	529,775	0 9 7	
39,506 10 0	5,612 13 9	...	2,58,101 6 7	535,584	0 7 9	

vaccination and re-vaccination performed by special staff only.

Registrar-Vaccinators of Rangoon Municipality have been included in the cost. Out of 15, only 1 Vaccinator

pointed as whole-time officers for supervising vaccination and vital statistics work, 1 Superintendent in charge of appointed by the *Sawbwa* of Hsipaw State, 43 Supervisors of Vaccination and 1 Head Vaccinator.

B.—DISPENSARY

STATEMENT NO. III—Showing Dispensary Vaccination in the

No.	Districts.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	PRI	
						Total.	Under one year.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ARAKAN DIVISION.							
1	Akyab	...	...	49	...	...	...
2	Hill District of Arakan	...	...	63	...	14	1
3	Kyaupkyu	...	...	...	...	...	...
4	Sandoway	...	...	...	...	...	...
	Total	...	...	112	...	16	1
RANGOON DIVISION.							
5	Rangoon	...	...	...	...	...	...
6	Insein	...	...	...	...	...	...
7	Hanthawaddy	...	...	115	...	101	18
	Total	...	...	115	...	101	18
PEGU DIVISION.							
8	Tharrawaddy	...	...	1,350	...	873	102
9	Pegu	...	...	...	...	...	...
10	Prome	...	...	...	...	...	...
11	Toungoo	...	...	...	...	...	...
12	Thayetmyo	...	...	...	...	...	...
	Total	...	...	1,350	...	873	102
IRRAWADDY DIVISION.							
13	Bassein	...	...	362	...	...	...
14	Henzada	...	...	90	...	8	...
15	Myaungmya	...	...	140	...	60	7
16	Ma-ubin	...	...	247	...	94	3
17	Pyapón	...	...	...	...	...	...
	Total	...	...	829	...	162	10
TENASSERIM DIVISION.							
18	Salween	...	...	...	...	...	...
19	Thatón	...	...	...	...	...	...
20	Amherst	...	...	26	...	26	23
21	Tavoy	...	...	...	...	...	...
22	Mergui	...	...	...	...	...	...
	Total	...	...	26	...	26	23
NORTH-WEST BORDER DIVISION.							
23	Pakókku	...	...	274	...	97	22
24	Katha	...	...	176	...	111	20
25	Shwebo	...	...	9	...	7	...
26	Sagaing	...	...	...	...	...	...
27	Lower Chindwin	...	...	203	...	66	3
28	Upper Chindwin	...	...	...	...	...	...
29	Chin Hills	...	...	...	...	...	...
	Total	...	...	662	...	281	45
MANDALAY DIVISION.							
30	Mandalay	...	...	69	...	64	54
31	Kyauskè	...	...	1	...	1	1
32	Meiktila	...	...	...	...	...	...
33	Yamèthin	...	...	...	...	...	...
34	Myingyan	...	...	11	...	...	...
35	Magwe	...	...	...	...	...	...
36	Minbu	...	...	...	...	...	...
	Total	...	...	81	...	65	55
NORTH-EAST FRONTIER DIVISION.							
37	Putao	...	...	...	...	...	...
38	Myitkyina	...	...	755	...	738	62
39	Bhamo	...	...	364	...	347	5
40	Northern Shan States	...	...	211	...	164	64
41	Southern Shan States	...	...	125	...	116	12
	Total	...	...	1,455	...	1,360	143
GRAND TOTAL for 1922-23							
		...	...	4,630	...	2,883	397
GRAND TOTAL for 1921-22							
		...	...	5,810	...	3,601	693
GRAND TOTAL for 1920-21							
		...	...	4,248	...	2,916	445

VACCINATION.

Province of Burma for the year 1922-23 (Paragraph 5).

MARY VACCINATION.			RE-VACCINATION.			PERCENTAGE OF SUCCESSFUL CASES IN WHICH THE RESULTS WERE KNOWN.		PERCENTAGE OF UNKNOWN CASES TO TOTAL CASES.		No.	
Successful.	One and under six years. (9)	Total of all ages. (10)	Unknown. (11)	Total. (12)	Success- ful. (13)	Unknown. (14)	Primary. (15)	Re- vaccina- tion. (16)	Primary. (17)	Re- vaccina- tion. (18)	
...	48	38	...	100.00	79.17	1
...	1	10	...	49	39	6	71.43	76.74	...	12.24	2
...	3
2	11	...	97	71	6	73.33	78.02	6.19	4
...	5
...	6
50	77	28	14	13	1	98.72	100.00	22.77	7.14	7	
50	77	23	14	13	1	98.72	100.00	22.77	7.14		
368	510	363	477	158	820	100.00	97.45	41.58	67.09	8	
...	9
...	10
...	11
...	12
368	510	363	477	158	820	100.00	97.45	41.58	67.09		
...	352	...	352	100.00	100.00	13
...	...	8	82	1	81	...	100.00	98.78	14
...	80	38	2	100.00	46.15	2.50	15
16	60	45	153	9	189	97.96	64.29	47.87	90.85	16	
33	48	45	17
...	
49	108	53	667	46	574	99.08	49.46	32.72	86.06	18	
...	19
...	100.00	20
...	3	26	21
...	22
3	26	100.00	
49	94	2	177	94	6	98.95	54.97	2.06	3.39	23	
35	88	16	65	9	51	92.63	64.29	14.41	78.46	24	
7	7	...	2	1	...	100.00	50.00	...	...	25
...	...	...	...	...	...	...	...	...	...	26
...	...	...	...	...	...	...	...	...	...	27
...	34	66	187	124	12	100.00	99.20	...	8.76	28	
...	...	...	...	...	...	...	...	...	...	29
125	255	18	381	228	69	96.96	79.08	6.41	18.11		
7	62	1	5	4	...	98.41	80.00	1.56	...	30	
...	...	...	...	...	...	...	...	...	...	31
...	1	...	...	...	...	100.00	...	...	...	32
...	...	...	...	...	...	...	...	...	...	33
...	...	...	11	1	10	...	100.00	...	90.91	34
...	...	...	...	...	...	...	...	...	...	35
...	...	...	...	...	...	...	...	...	...	36
7	63	1	16	5	10	98.44	88.33	1.54	62.50		
...	...	...	...	...	...	...	...	...	...	37
...	190	562	171	22	17	1	100.00	80.95	23.33	4.55	
118	813	34	17	12	5	100.00	100.00	9.80	29.41	38	
70	159	6	47	20	4	100.00	89.77	3.05	8.51	39	
43	94	22	9	4	5	100.00	100.00	18.97	55.96	40	
421	1,128	232	95	69	15	100.00	78.75	17.06	15.79	41	
1,025	3,178	690	1,747	579	995	99.82	76.99	23.93	56.95		
1,503	3,063	492	2,209	758	969	98.68	56.57	13.66	39.84	42	
724	1,685	421	2,287	665	936	98.12	51.11	20.88	41.58		

COMPARATIVE STATEMENT NO. IV—Showing the number of persons fully vaccinated in the Province of Burma in each

Establishments.	PERSONS PRIMA									
	Total number.	Number success-fully vaccinated.								
	(1)	(2)	(3)	(4)	(5)	(6)	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Government	171,608	158,632	166,653	150,189	149,958	139,601	155,431	144,836	155,824	148,536
Municipal	33,098	31,476	33,006	30,815	32,795	31,123	38,123	34,760	33,500	30,953
Local Funds	210,401	192,887	192,408	175,416	198,458	184,045	218,420	200,118	227,468	212,064
Native States	6,826	5,751	2,944	2,172	3,390	2,203	10,391	1,025	11,186	7,163
Dispensary	3,573	3,077	1,704	1,509	2,849	2,585	2,899	2,320	1,523	1,307
Other Agencies	...	...	7,544	6,879	7,341	5,520	2,314	8,78	7,05	462
ARMY.	...	...	...	...	...	...	...	...	...	...
Europeans	69	64	42	30	25	25	10	10	12	11
Natives	255	224	253	174	655	513	597	512	415	346
Total	425,830	392,111	404,563	367,184	395,471	365,565	423,185	393,459	430,633	395,772

STATEMENT NO. V—Showing particulars of Vaccination verified

No.	Districts.	TOTAL NUMBER OF PERSONS VACCINATED.				TOTAL NUMBER INSPECTED				
		Primary.		Re-vaccinations.		By Assistant Director of Public Health or Civil Surgeons.		By Native Supervisors or other Inspecting Officers.		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
1	Akyab	...	...	21,378	23,443	41	...	10,139	13,115
2	Hill District of Arakan	...	...	676	706	6	208	11	38
3	Kyaukpyu	...	...	17,226	7,224	1,600	938	...	...
4	Sandoway	...	...	7,452	2,210	538	186	3,613	1,080
5	Rangoon	...	...	9,488	18,976	556	601	8,302	16,410
6	Insein	...	...	13,461	2,800	1,686	142	10,722	1,423
7	Hanthawaddy	...	...	13,887	2,768	1,627	257	6,722	930
8	Tharrawaddy	...	...	19,222	11,453	1,250	908	12,628	5,792
9	Pegu	...	...	14,802	2,766	3,471	88	12,243	1,271
10	Prome	...	...	18,407	1,897	860	...	7,917	329
11	Toungoo	...	...	14,971	5,037	6	...	6,769	2,170
12	Thayetmyo	...	...	9,269	3,625	394	...	7,026	2,058
13	Bassein	...	...	18,048	6,539	98	42	11,028	8,453
14	Henzada	...	...	29,253	3,112	1,911	93	18,390	306
15	Myaungmya	...	...	17,111	3,637	661	140	6,995	1,597
16	Ma-ubin	...	...	20,254	5,612	1,746	610	16,049	2,695
17	Pyapôn	...	...	19,256	1,371	...	...	16,225	672
18	Salween	...	...	2,844	1,269	108	31	...	...
19	Thaton	...	...	15,238	8,740	489	88	6,295	829
20	Amherst	...	...	13,214	14,314	628	1,710	3,890	3,963
21	Tavoy	...	...	6,259	1,382	1,412	93	4,996	1,097
22	Mergui	...	...	4,486	1,005	468	225	2,784	647
23	Pakokku	...	...	15,969	5,525	2,464	85	6,339	1,828
24	Katha	...	...	10,698	2,122	2,070	275	7,187	971
25	Shwebo	...	...	15,950	431	86	...	7,567	68
26	Sagaing	...	...	16,816	5,803	2,612	2,329	11,987	1,913
27	Lower Chindwin	...	...	10,826	7,09	2,783	1,849	8,742	6,256
28	Upper Chindwin	...	...	10,461	841	170	...	5,618	433
29	Chin Hills	...	...	3,881	156	118	...	203	9
30	Mandalay	...	...	19,362	5,307	1,128	2	13,661	1,014
31	Kyauské	...	...	4,860	3,889	267	40	3,619	2,880
32	Meiktila	...	...	8,494	516	3,967	...	6,903	122
33	Yamethin	...	...	12,578	1,426	3,488	249	8,835	632
34	Myingyan	...	...	16,224	4,705	1,200	...	11,072	2,684
35	Magwe	...	...	21,507	10,781	986	318	1,629	2,078
36	Minku	...	...	11,775	2,579	571	94	248	4
37	Putao	...	...	202	140	48	48	...	...
38	Myitkyina	...	...	2,623	185	449	166	870	46
39	Bhamo	...	...	3,700	397	228	130	528	33
40	Northern Shan States	...	...	15,019	488	1,480	150	1,169	63
41	Southern Shan States	...	...	22,056	1,215	245	162	11,230	54
GRAND TOTAL FOR 1922-23		...	528,763	178,558	43,929	12,140	275,093	74,851		
GRAND TOTAL FOR 1921-22		...	494,839	160,920	54,162	19,411	276,121	71,603		
GRAND TOTAL FOR 1920-21		...	483,524	190,961	52,809	27,921	221,753	64,787		

primarily vaccinated and the number of those persons who were success-
of the undermentioned official years.

BILLY VACCINATED

Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Establishments
1918-19.		1919-20.		1920-21.		1921-22.		1922-23.		
(7)	(8)	(9)	(10)	(11)	(12)					
146,541	138,337	179,204	162,448	165,491	152,910	174,549	160,011	196,950	180,625	Government.
37,290	35,269	38,604	35,973	35,519	33,224	40,478	38,460	41,884	39,932	Municipal.
231,214	216,462	257,218	239,580	272,949	256,940	282,888	247,532	270,396	256,285	Local Funds.
7,851	7,349	9,177	5,045	7,280	5,155	10,234	8,695	10,643	1,0559	Native States.
2,063	1,764	7,220	4,781	8,016	1,585	3,601	3,068	2,883	2,178	Dispensary.
304	303	398	371	267	217	8,589	3,285	1,007	857	Other Agencies.
24	23	28	24	58	46	11	9	123	95	ARMY.
482	431	67	27	1,342	463	9	9	888	791	Europeans.
425,772	399,933	491,916	443,249	481,922	450,520	494,859	461,069	524,774	491,272	Natives.
										Total.

by Inspecting Officers during the year 1922-23 (Paragraph 12).

PERCENTAGE OF INSPECTIONS TO TOTAL NUMBER VACCINATED				PERCENTAGE OF CASES FOUND SUCCESSFUL OF TOTAL NUMBER INSPECTED				PERCENTAGE OF SUCCESS REPORTED BY VACCINATORS.				No
By Assistant Director of Public Health or Civil Surgeons.	By Native Supervisors or other Inspecting Officers.	By Assistant Director of Public Health or Civil Surgeons.	By Native Supervisors or other Inspecting Officers.	Primary.	Re-vaccinations.	Primary.	Re-vaccinations.	Primary.	Re-vaccinations.	Primary.	Re-vaccinations.	
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		
·19	...	47·40	55·94	90·24	...	93·46	47·29	97·97	71·68	1		
·89	28·26	1·63	5·16	100·00	86·54	90·91	86·84	96·00	84·88	2		
9·29	12·98	...	...	70·00	26·33	...	...	95·42	47·35	3		
7·22	8·42	48·48	48·87	94·80	10·22	94·77	12·50	93·83	19·39	4		
5·86	3·17	88·13	54·86	99·8	92·01	99·95	51·54	99·48	52·41	5		
12·53	5·07	79·65	50·82	97·51	26·08	99·91	7·87	99·54	12·47	6		
12·15	9·29	50·21	38·62	97·60	17·51	68·33	29·03	99·40	89·69	7		
6·50	7·93	65·69	50·57	98·56	55·07	99·66	49·50	99·88	70·64	8		
23·45	3·18	82·71	45·95	99·97	53·41	99·64	9·99	99·66	20·60	9		
6·41	...	59·05	17·84	85·47	...	95·49	44·88	98·50	39·68	10		
·04	...	45·21	41·10	100·00	...	99·44	28·79	99·48	81·86	11		
8·60	...	75·80	56·77	96·71	...	94·65	57·92	94·80	60·99	12		
·54	·64	61·10	52·81	100·00	100·00	92·97	48·60	97·12	58·63	13		
6·80	1·06	45·73	9·83	98·39	39·39	99·14	86·93	99·64	28·76	14		
3·86	8·85	48·80	43·91	98·95	50·71	86·99	52·04	97·99	50·80	15		
8·62	10·87	79·24	48·02	98·11	31·48	99·40	24·16	99·72	28·59	16		
...	...	84·26	49·02	...	...	99·58	53·27	99·93	33·62	17		
3·80	2·44	...	...	91·87	41·93	...	...	95·36	42·55	18		
3·21	1·02	41·31	22·17	99·39	81·58	99·89	50·18	99·86	47·78	19		
4·75	11·95	29·44	27·62	97·61	47·37	94·60	45·91	97·72	42·21	20		
22·56	6·73	79·82	79·38	98·44	80·65	97·39	54·23	99·58	59·69	21		
10·44	22·39	62·76	64·38	95·46	74·67	79·74	96·63	89·92	51·12	22		
15·37	1·51	39·70	33·05	98·70	24·71	95·31	11·01	94·04	13·72	23		
19·35	14·96	67·18	15·76	99·95	68·91	97·73	27·39	97·03	36·18	24		
·54	...	47·44	15·78	100·00	...	95·36	14·71	94·41	53·49	25		
15·46	89·72	70·95	32·63	95·87	80·07	98·63	63·69	99·51	70·82	26		
25·71	26·12	80·75	88·37	98·42	88·75	98·42	76·65	99·70	81·91	27		
1·70	...	53·70	46·01	100·00	...	94·22	65·59	98·32	86·30	28		
3·04	...	5·23	5·77	100·00	...	99·51	66·67	96·86	63·74	29		
5·83	·04	70·04	19·11	100·00	50·00	99·45	56·80	99·58	47·41	30		
5·49	1·04	74·47	75·02	100·00	87·50	99·86	92·36	99·81	91·44	31		
46·70	...	81·27	23·64	100·00	...	99·48	66·89	99·99	89·02	32		
27·73	17·46	70·24	44·32	95·99	78·09	94·14	45·25	94·36	46·92	33		
7·40	...	68·24	57·05	100·00	...	96·79	65·16	97·70	56·16	34		
4·58	2·93	7·57	19·27	97·87	67·09	79·01	36·00	99·01	56·51	35		
4·85	3·64	2·11	·16	91·59	1·06	91·13	50·00	95·91	51·72	36		
23·76	30·71	...	...	91·67	86·05	...	...	100·00	74·59	37		
17·12	89·73	33·17	24·86	98·89	52·41	92·99	45·65	94·28	56·72	38		
6·16	32·75	14·27	8·31	99·56	81·54	99·43	66·67	97·82	68·83	39		
9·85	34·25	7·72	14·38	97·97	70·00	98·45	74·80	98·80	79·49	40		
1·11	13·33	50·92	4·44	90·20	57·41	99·08	50·00	97·88	58·84	41		
8·89	6·80	52·52	41·92	96·82	58·89	96·47	49·22	98·10	59·68			
10·94	12·06	55·80	44·48	98·06†	78·60†	97·38†	54·17†	98·07	53·46			
10·92	14·62	45·86	38·90	97·29	69·23	96·02	49·34	97·48	55·70			

† Revised figures

APPENDIX A.

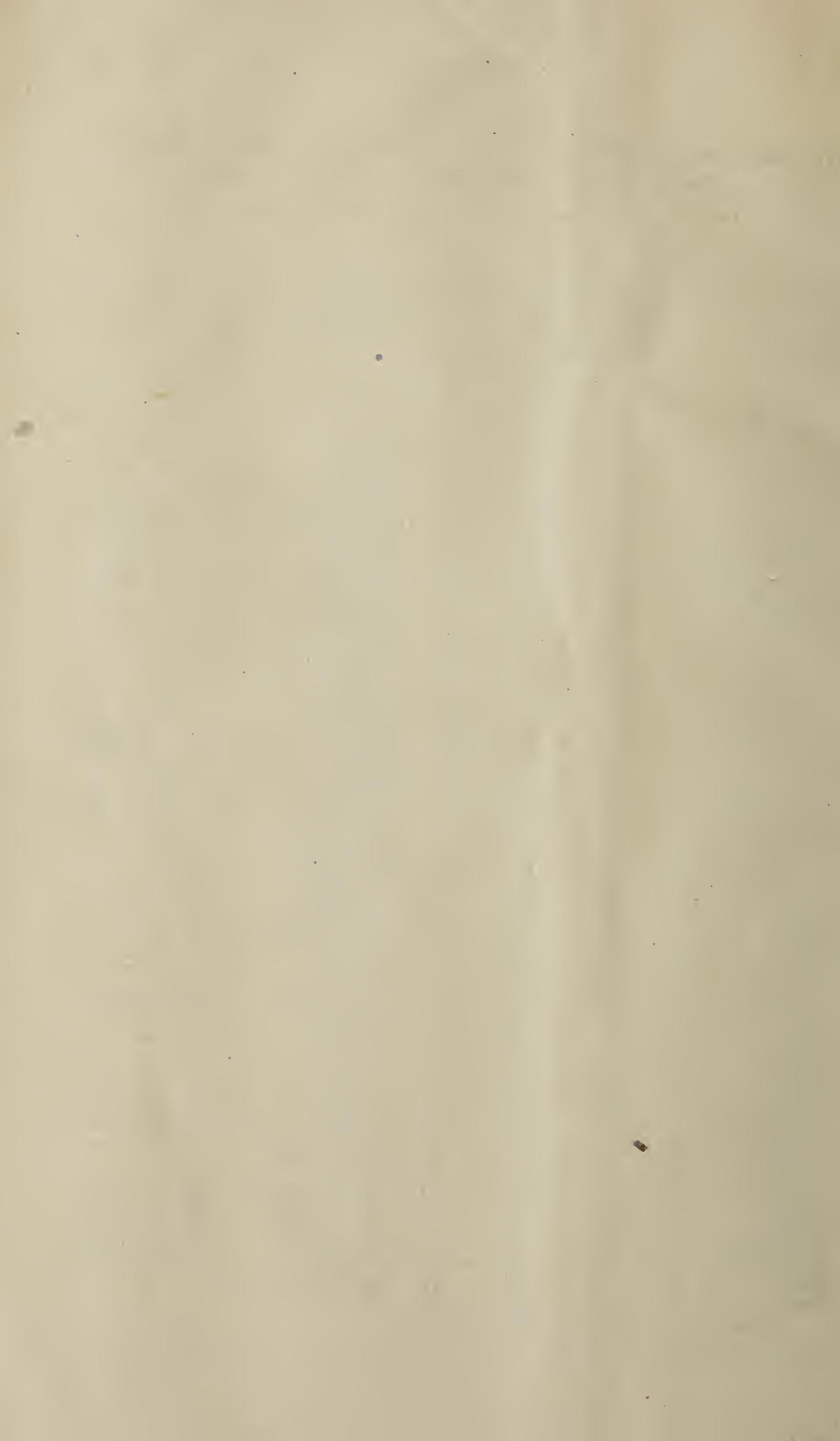
Statement showing the ratio per 10,000 successfully vaccinated and the mortality from Small-pox by quinquennial periods for Lower Burma only.

Official year. (1)	Ratio per 10,000 successfully vaccinated. (2)	Quinque- nial mean. (3)	Calendar year. (4)	Ratio per 10,000 of mortality from small- pox. (5)	Quinque- nial mean. (6)
1907-08	294.95		1907	2.87	
1908-09	289.34		1908	1.89	
1909-10	800.97	815.70	1909	1.57	3.81
1910-11	288.91		1910	3.27	
1911-12	896.05		1911	9.13	
1912-13	360.56		1912	9.61	
1913-14	380.31		1913	2.87	
1914-15	389.06	369.04	1914	.39	2.85
1915-16	360.44		1915	.33	
1916-17	404.85		1916	1.06	
1917-18	389.20		1917	.89	
1918-19	422.32		1918	1.16	
1919-20	461.63	444.68	1919	2.31	1.66
1920-21	493.29		1920	3.35	
1921-22	451.04		1921	.71	
1922-23	472.34		1922	1.75	

APPENDIX B.

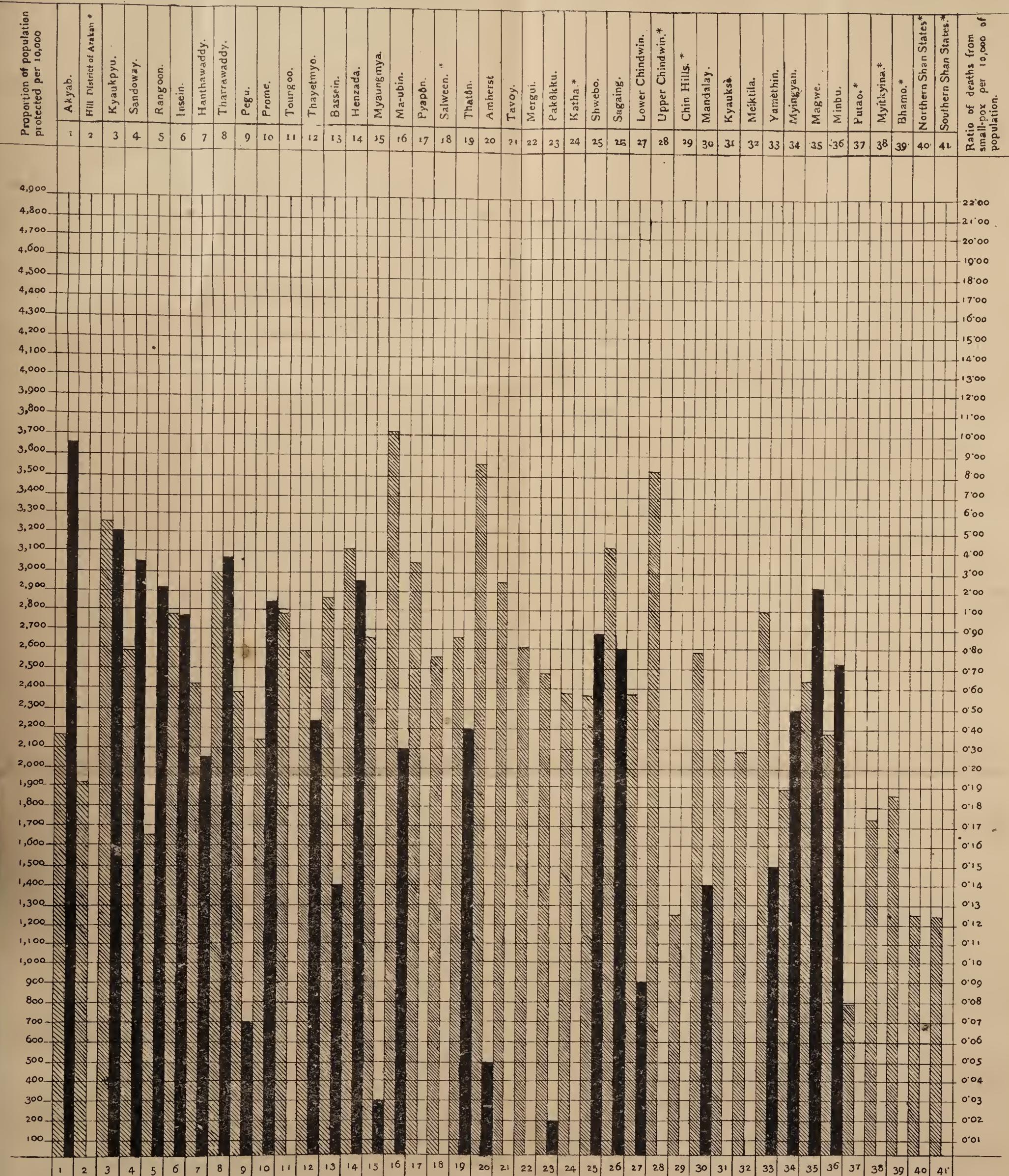
Statement showing the number of Vaccinations performed in Municipal Towns and notified areas (to which Vaccination Act has been extended) on children under one year of age (Paragraph 9).

Towns.	Number of births during the year 1922-23.	Number of deaths among children under one year during the year 1922-23	Number of successful operations on children under one year during the year ending 31st March 1923	Date of extension of Vaccination Act of 1880 into towns.	Date of extension of Vaccination in Law Amendment Act of 1909.
(1)	(2)	(3)	(4)	(5)	(6)
Akyat	...	601	175	276	August 1883
Kyaukpyu	...	114	23	41	April 1894
Sandoway	...	110	25	70	September 1890
Rangoon	...	6,169	2,131	5,680	April 1884
Insein	...	231	50	241	14th March 1912
Syriam	...	214	44	126	29th January 1913
Thonwya	...	209	40	157	3rd March 1914
Tharrawaddy	...	67	10	48	October 1897
Thonze	...	200	36	157	October 1897
Zigon	...	187	23	188	11th May 1914
Letpadan	...	171	71	159	January 1897
Gyobingauk	...	167	69	103	February 1897
Minhla	...	111	22	89	11th May 1914
Nattalin	...	55	9	58	11th May 1914
Pegu	...	505	147	471	March 1893
Nyaunglèbin	...	186	76	259	29th March 1910
Prome	...	588	44	523	June 1890
Shwedaung	...	268	62	102	10th September 1917
Paungdè	...	343	140	171	August 1890
Toungoo	...	437	76	304	May 1889
Shwegyin	...	153	31	129	January 1890
Pyu	...	91	22	76	January 1920
Thayetmyo	...	193	52	201	May 1889
Allaumyo	...	263	40	916	May 1901
Bassein	...	1,001	337	874	September 1888
Ngathainggyaung	...	172	37	119	February 1890
Henzada	...	648	169	380	January 1889
Myanaung	...	188	29	221	July 1889
Kyangin	...	186	32	174	August 1894
Myaungmya	...	167	39	128	June 1894
Wakema	...	290	92	98	27th April 1907
Ma-ubin	...	170	42	144	October 1891
Yandoon	...	194	22	173	January 1892
Danubyu	...	154	22	127	9th July 1909
Pyapón	...	191	19	201	November 1904
Kyaiklat	...	176	41	140	15th December 1904
Thaton	...	388	72	321	October 1891
Kyaikto	...	194	43	135	March 1897
Moulmein	...	1,525	829	1,430	August 1885
Kawkareik	...	252	62	103	September 1914
Tavoy	...	785	176	777	December 1889
Mergui	...	519	148	369	October 1891
Pakokku	...	691	109	196	April 1892
Shwebo	...	244	137	176	June 1894
Sagaing	...	400	93	215	April 1894
Monywa	...	377	108	241	March 1893
Mandalay	...	6,862	2,259	5,789	August 1891
Maymyo	...	602	110	373	October 1912
Kyaukèd	...	235	49	207	May 1894
Meiktila	...	279	59	254	June 1906
Yaréthin	...	218	70	158	February 1892
Pyinmana	...	282	147	414	November 1891
Pyawbwe	...	121	52	126	May 1912
Myingyan	...	492	215	271	September 1891
Nyaung.u	...	164	10	175	30th August 1921
Magwe	...	208	55	231	10th March 1913
Taungdwingyi	...	197	79	188	February 1893
Yenangyaung	...	250	82	872	10th March 1913
Minhu	...	200	31	122	March 1896
Salin	...	216	42	161	March 1896
Bhamo	...	153	13	151	28th October 1894
Total	...	80,875	8,858	25,777	



APPENDIX C.

Diagram showing the Proportion of Population protected during the seven official years from 1916-17 to 1922-23 and the Death-rate from Small-pox during the year 1922 in districts where full registration is in force.



Indicates proportion of population protected per 10,000.



Indicates ratio of deaths from small-pox per 10,000 of population.

* Full registration of vital statistics is not carried out in these districts.

Ratio of deaths from small-pox per 10,000 of population.

